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EDITED BY J. ADAMS ALLEN, M.D., LL.D.; AND WALTER HAY, M.D.

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RUSH MEDICAL COLLEGE — *Twenty-ninth Annual Commencement Exercises.*

The Rush Medical College had the exercises of its Twenty-ninth Annual Commencement, Wednesday evening, Jan. 17th, in the east lecture room of the Michigan Avenue Baptist Church. The place was crowded with students and friends of the institution. The diplomas were delivered to the graduating class with the usual formula. There were seventy-seven graduates. They were a good, honest, intellectual looking set of men, and will do credit to their Alma Mater. The oldest student in the class is thirty-seven years of age, the youngest twenty-one. The average is about twenty-five. The names of the graduates follow:

LIST OF GRADUATES.

Name.	*Residence.*
O. J. H. ADAMS,	Chicago, Illinois.
WM. F. ARTZ,	Byron, Illinois.
CHAS. H. BURBANK,	Campton, Kane county, Illinois.
CHAS. E. BOOTH,	Elroy, Juneau county, Wisconsin.
E. C. BARTHOLOW,	Mahomet, Illinois.
S. S. CLAYBERG,	Fairview, Fulton county, Illinois.

ALBERT CHENOWETH,	Decatur, Illinois.
F. ANTES CANFIELD,	Necedah, Wisconsin.
H. S. CHAPIN,	Dewitt, Illinois.
THOS. N. CUNNINGHAM,	Havana, Illinois.
CHAS. T. CORY,	Patch Grove, Grant county, Illinois.
O. P. CRANE,	Mason City, Illinois.
J. C. DORCHESTER,	Chicago, Illinois.
L. H. DUNNING,	Edwardsburg, Michigan.
T. B. DEWITT,	Milan, Sullivan county, Missouri.
J. W. DUNN,	Lamar, Barton county, Missouri.
D. B. DARR,	Ladora, Iowa county, Iowa.
C. M. EASTON,	Norton, Kankakee county, Illinois.
W. W. EDGERTON,	Sparta, Wisconsin.
J. McL. FLEMING,	Chicago, Illinois.
E. W. FAIRMAN,	Oxfordville, Rock county, Wisconsin.
S. C. FREELAND,	Portersville, Dubois county, Indiana.
JOHN H. GARDINER,	Mahomet, Illinois.
JOHN H. GERNON,	Lafayette, Indiana.
E. S. GARVIN,	Sycamore, Illinois.
JOHN GARDNER,	Davisville, Yolo county, California.
G. B. GALER,	Dewitt, Clinton county, Iowa.
R. H. HUDDLESTON,	Farmer City, Illinois.
P. S. HAYES,	Chicago, Illinois.
R. S. HALL,	Waterloo, Iowa.
W. H. HILL,	Dayton, Tippecanoe county, Indiana.
W. F. HILSABECK,	Windsor, Illinois.
S. M. JENKS,	Cokato, Minnesota.
E. J. KENDALL,	Waupecong, Indiana.
G. W. LASHER,	Kane, Greene county, Illinois.
W. K. MILLER,	Batavia, Jefferson county, Iowa.
W. L. McCANDLESS,	Pinckneyville, Illinois.
OTIS MOORE,	Chicago, Illinois.
L. C. MESSNER,	Marysville, Illinois.
HORATIO N. MACKEY,	Morganstown, West Virginia.
R. L. McKINNIE,	Viola, Illinois.
ANDREW McFARLAND,	Jacksonville, Illinois.
S. K. McBRIDE,	New Alexandria, Pennsylvania.
W. B. MEAD,	Huntsville, Illinois.
P. H. MILLARD,	Lisbon Centre, New York.
D. E. MAGOON,	Whitewater, Wisconsin.
A. A. VON MANSFELDE,	Chicago, Illinois.
M. C. McPHERSON,	Eagle Point, Ogle county, Illinois.
G. F. MERRITT,	Burlington, Iowa.
J. W. NORRIS,	Mackinaw, Illinois.
A. L. NORRIS,	Farmer City, Illinois.
A. OWEN,	Texana, Jackson county, Texas.
C. W. PHILLIPS,	Springfield, Illinois.
H. H. PRATT,	Crown Point, Indiana.
Z. E. PATRICK,	Washington, Illinois.
H. J. PRATT,	Montello, Michigan.
B. PLACKETT,	Wanakee, Dane county, Wisconsin.
D. L. RUSSELL,	Versailles, Illinois.
D. L. ROSS,	Chicago, Illinois.
A. N. RICHARDSON,	LaMoille, Illinois.
G. F. ROBERTS,	Metamora, Illinois.
A. B. STRONG,	Gambier, Ohio.

J. I. SMITH,	Lena, Stephenson county, Illinois.
W. F. STANDIFORD,	Westville, Indiana.
E. J. SMITH,	Cedar Rapids, Iowa.
CYRUS SMITH,	Anoka, Minnesota.
J. W. STANDLEY,	Kirksville, Adair county, Missouri.
O. P. SMITH,	Corydon, Wayne county, Iowa.
J. A. SMITH,	Cedar Rapids, Iowa.
S. C. THOMPSON,	Merton, Waukesha county, Wisconsin.
E. K. McA. TAYLOR,	Le Roy, McLean county, Illinois.
GEO. H. TEBO,	Mount Sterling, Brown county, Illinois.
J. G. TRUAX,	Fort Atkinson, Wisconsin.
THOS. L. A. VALIQUET,	Chicago, Illinois.
R. W. WELLS,	Texana, Jackson county, Texas.
S. J. WAY,	Kankakee City, Illinois.
O. B. WIGGINS,	Lawrence, Michigan.
Ad Eundem—	
ERNST SMITH,	Chicago, Illinois.

CHARGE TO THE CLASS.

Dr. J. W. Freer, President of the institution, delivered a brief charge to the class, which contained much sensible advice. He said:

Gentlemen of this graduating class: The highest honors of this institution, by which you are initiated into the medical fraternity, have now been conferred upon you. The testimonials which you bear away will be respected by the intelligent public as so many assurances of your learning, skill, and scientific attainments. Your future conduct must determine how well you have deserved these tokens at the hands of your *Alma Mater*. It is customary on such occasions as this to address the young alumni with friendly words of advice and admonition, with the hope and expectation that their future conduct as physicians and citizens may thereby be influenced for good. It is also a time-honored custom to expatiate largely upon the sacredness of our calling. We have no objections to this when appropriate and opportune. But in this instance, knowing as we do, by personal intercourse, the superior degree of intelligence and high moral tone of the present graduating class, we deem it quite unnecessary to try their patience with a long list of the benefits to be derived from the practice of virtue, temperance, benevolence and industry.

We have frequently during the session offered such advice as we deemed useful, and particularly have we advised that you should make up your minds to devote all your leisure moments, during your whole natural lives, to the pursuit of this study of science that you have as yet but skimmed over in the most superficial manner. For these purposes the early part of your career as physicians will, I might say fortunately for many, afford you many spare days. You have now learned how to learn, and how to study, and

this is a great advantage, and the first thing in importance in the acquirement of knowledge. We have shown you the proper methods of study, of the functions of different kinds of living and dead animals, by experiment and otherwise, by which you may become familiar with the physiological phenomena before attempting to unravel the pathological conditions. Repeat these experiments and observations until the details are engraven upon the tablet of your memories. Make every reasonable sacrifice in order to gain possession of microscopes that you may continue your studies.

The necessity of continued study was further inculcated in energetic and appropriate terms. The essentials to the success of the physician were named as follows: "A gentlemanly exterior, a cultivated address, a neat, commodious, well-furnished office, a large, well-selected library, and all necessary instruments and apparatus." The obtaining of these essentials would occupy fully the time of the young physicians before the speaker, and save the necessity of lounging in the corner grocery. The characteristics of the unsuccessful physician were next enumerated. They were a lack of neatness, as shown by a cob-webbed office, and carelessness in providing the tools essential to the prosecution of his business. The address closed as follows:

In conclusion, gentlemen, allow me, in behalf of the Trustees and Faculty of Rush Medical College, to express to you our sense of obligation for the noble manner in which you have sustained us during our days of trial. You enjoyed our beautiful college edifice but a few days; you saw it sink in ashes, but stood by like friends in need. At that time the world's great heart palpitated with sympathy for the dreadful losses sustained by your *Alma Mater*. The doors of the most renowned schools, as well as those of lesser note, were thrown wide open to you free of charge, wherein you might finish your course of lectures. But you declined these generous offers, and chose to remain with the school of your first choice, notwithstanding circumstances had driven it to humbler halls and plainer surroundings. The result of our course has proven that ornate walls of brick and mortar are not essentials of successful medical teaching, for no preceding class has given greater satisfaction at the final examination than that of 1871 and 1872.

CLASS VALEDICTORY.

The class valedictory was delivered by O. J. H. Adams, as follows:

Mr. President, and Gentlemen of the Faculty of Rush Medical College:

The twenty-ninth graduating class of this institution will now, through me, their representative, respond to the charge just given.

To the thinking mind, in all ages of the world, three important questions have ever been presented, viz: What am I? Whence my origin? What my destiny? The answers to these three questions came in process of time from two sources. First, to man from his Creator; secondly, from man himself. The first known as revelation; the second, reason—so called.

When man first asked these questions, and a reply came from his Creator, he was doubtless content; but time passed—generation after generation arose; this reply was given from father to son. Some accepted it, and were satisfied; others, the greater number, wise above their day and generation, added to or detracted from, as their reason, so called, dictated; and here arose the contest between reason and revelation, the breach widening from that until the present.

As the reply from the Creator—revelation—has never changed, and is familiar to you all, we will not repeat it here, but proceed to notice the replies given by man.

The replies given by man, the offspring of reason, have continually changed as time has changed.

We shall only notice the two recorded extremes, as presented near three thousand years ago, and at the present time. Near three thousand years ago, when a philosopher turned his thoughts within and asked himself these questions, there came the following replies:

What am I? A god or a demi-god.

What the source of this intelligence I manifest? The divinity within.

Whence my origin? From the gods.

How? In accordance with the divine law of procreation.

What my destiny? Immortality.

Here we find part of the fundamental principles presented in revelation, but so modified as to be more acceptable to man's pride.

At the present time, after the passage of those thousands of years, during which human reason has been continually at work—reason independent of everything except its own inherent powers—we receive the following replies from the same class of men to the same questions.

What am I? A baboon.

What the source of this intelligence I manifest—this reason? The brain and nervous system, acting on the principle of a galvanic battery.

Whence my origin? From a species of porifera.

How? By mere chance.

What my destiny? Annihilation.

Human reason continuously employed through thousands of years upon one topic, man; commencing in the belief of the divinity and immortality of man, and the result summed up runs thus:

I now am a baboon.

My mental manifestations are the results of magnetism.

My parents millions of years ago were a species of porifera. They came into existence by mere chance.

In death I shall be annihilated.

When in early youth we were first permitted to indulge in perusing the classic lore of Greece and Rome, and in our imaginations took our stand on Ilium's walls, and there beheld men, gods, and demi-gods, all engaged in one bloody conflict, whilst the Eternal, seated on snow-capped Olympus, from his mighty arm hurled athwart the murky sky his flaming bolts, we were entranced. Or from Mount Ida's top, at early morn, we beheld Aurora seated in her golden chariot, with foaming steeds, dashing through the eastern sky to unbar the gates of light, we were charmed.

This theology of three thousand years ago, as modified by man, possessed a peculiar fascination in flattering man's pride, and feeding his imagination, that rendered its adoption somewhat excusable; but this theology, if we may so speak, *the offspring of reason alone*, received by the same class of men in modern times, is certainly devoid of one single charm to recommend it to any one. Could it possibly be true, its acceptance must necessarily commence in humiliation, run into degradation, and finally end in ruin. The belief in death being an endless sleep is enough of itself to produce all this.

Revelation, on the other hand, when truly accepted, commences immediately to elevate morally, and render life more desirable; and as time passes, it continues to elevate morally, and increase one's happiness; and when the hour arrives for the great change known as death, it disarms the grave of all its terrors, and enables the departing one to meet death joyfully. This assertion has been verified in the life and death of millions.

If now it were possible for revelation to prove untrue, and there be no hereafter, it certainly has done the deceased one no injury—his endless sleep will be just as sweet as though he had died a devoted disciple of modern theology. But, on the other hand, should it prove true—which it certainly will—what is there in the possession of man that he would not give, or in the power of man that he would not do, that in death he might be enabled to realize such a truth?

A selection between the theology of man and that of revelation is not difficult. We unhesitatingly take the side of revelation.

Entertaining this view concerning the two systems of theology commented on so much by the learned everywhere, we came to Rush Medical College, one of the great centers of learning in the Northwest, there to pursue further our medical studies. At this place we were to be taught by you, gentlemen, who are thoroughly familiar with the structure and design of all the visible, or material portions of man; that part, upon the study of which alone, is founded modern theology; and having often heard it said that "learned" medical men were generally disbelievers in revelation, great was our desire to know what would be said by you, our newly chosen preceptors, upon questions of such vital importance.

The college term commenced—our desires were immediately gratified. Three of your number, including the professor of anatomy, in your introductory lectures, gave us to understand, and that very emphatically, that they do not regard men as baboons, nor the descendants of baboons. Neither do they accept the theory that man's mental manifestations are a species of magnetism; and much less still do they believe that in death man is annihilated.

Seven others of your number addressed us, all acquiescing in the views presented by the three I have mentioned. After this, several of your number were asked individually, outside of the lecture room, what their views were upon the three questions with

which I commenced this discourse. Their replies were in perfect harmony with revelation.

Fifteen days passed. Students were arriving from all parts of our country. California and Southern Texas, the East and the distant North, were represented. Never before, so early in the term, had Rush such an assemblage of students within her walls. Never before had you, her professors, commenced a course of lectures with such prospects, such pleasure, such anticipations.

But now the fullness of time had arrived for Chicago, the wonder of the world, the pride of our nation, to, phœnix-like, renew her youth, and your stately edifice, which added so much to her grandeur and reputation, must necessarily be consumed in the general conflagration; that, purified and beautified, it might be the better fitted for its exalted position in the new and magnificent Chicago of the future.

We students, being uninformed in this peculiarity of your city, supposed a terrible and almost irreparable calamity had befallen the college, and mourned with heartfelt sorrow what we believed her tragic and untimely fate. But soon we were informed, though the building was consumed, the college still lived; and not only lived, but that its life was intensified. The professor, who, previous to the fire, must necessarily have three skeletons and two fresh subjects, in order to deliver a successful course of lectures, now affirmed, that with one bone and standing on the open prairie, he could deliver a better course of lectures on anatomy than he had ever before delivered at Rush Medical College.

On hearing this we rallied, and to our joy ascertained the fact, that what we had looked upon as Rush Medical College, was no more necessary to its existence than the aged body of Israel's great law-giver, slumbering in the plains of Moab, was to the existence of Moses, who on Hermon's top held communion with our Savior and Elijah.

Rush truly lived. Lectures commenced again in earnest, and have continued in earnest until the present time, the close of the term. As a *resume* of what each professor has said would be out of place here, owing to our limited time, we must content ourselves by saying, that during the term all obsolete theories, that serve only to confuse the student's mind, have been passed by unnoticed, and that the living, breathing, practical truths of the

present alone have engaged your attention. The result has been, a telling effect upon the minds of the class.

So, gentlemen of the Faculty, taking the whole term of lectures, from its commencement to its conclusion, notwithstanding the "world's fire," we have no hesitancy in saying it has been a grand success, and that we believe no class, through the whole length and breadth of our country, have received so much practical knowledge as we have; and if our future as practitioners be not one of success, we shall charge the defect to our own natural inability, not to a lack of proper instruction.

And now before we separate, we promise an unswerving fidelity to the broad and liberal principles you have so earnestly and forcibly presented for our adoption; and that in the future when you see or hear from a member of the class of eighteen hundred and seventy-one and seventy-two, it matters not where he may be, treading the cold and frozen soil of the distant North, or scorched beneath the burning rays of a tropical sun—on the stormy coasts of the Atlantic, or basking in the more genial climes of the Pacific, you shall learn, true as the needle to the pole he remains to those great and unchanging principles of medicine he first learned here; and that with a bold front and a firm tread, he is marching on in the faithful discharge of his professional duties, bearing aloft unsullied the standard of Rush, and proudly claiming her as his *Alma Mater*.

One thing more before I close. Even here in Chicago we are asked if the college building is again to be reconstructed. When we reach our homes the same question will be asked us there. Our answer shall be, Yes, just as certain as the sun continues to rise and to shine. Rush is part of Chicago; their interests are one and inseparable. Earthquakes may level, tornadoes may scatter, waters may drown, or fires consume, but before the rumbling of the earthquake's tread dies on the ear, the air becomes calm from the tornado, the water dries in the streets, or the ashes become cool from the fire, Chicago will begin to rise again, and with it, Rush, and that to increased splendor and glory. Farewell!

Companions of the class of eighteen hundred and seventy-one and seventy-two, you have heard my promise. I shall not say to you, hold it inviolable; I know you will do this. The readiness with which you rallied to the standard of Rush immediately after

the fire, the zeal and ability you have manifested ever since, convinces me you are fully alive to the responsibility of your position, and that as men you will unhesitatingly discharge them.

Good bye.

PRESENTATION.

A pleasant episode occurred in the exercises. This was a presentation of a handsome case of surgical instruments to Dr. Gunn, Professor of Surgery. The presentation speech was made by Dr. A. N. Richardson, of LaMoille, Illinois, in behalf of the class. It was happily worded, and abounded in neat puns on the names of the faculty, which were received with applause and laughter.

Professor Gunn replied in an equally happy manner, thanking the class warmly for this token of their esteem, and his stars that had inspired them to bestow so appropriate a gift, and not a cane or a chair.

The concluding portion of the exercises was the following valedictory address, delivered by Jas. H. Etheridge, Professor of Materia Medica and Medical Jurisprudence:

VALEDICTORY.

Gentlemen:

The present occasion is one fraught with great interest to you, because it records one of the few intensely interesting points in the career of a medical man. The hopes and aspirations filling your hearts this evening, would, if drawn upon canvass by a skillful artist, present one of the most curious and interesting pictures one can imagine. The past few years have been occupied with assiduous study. Earnestness has characterized your every effort. The sanctity of the dissecting and lecture rooms and clinical amphitheatres has not been violated by the spirit of trifling. Steady perseverance has conquered many a difficult point for you, and you feel proud of the ability to stand here this evening and demand at our hands the evidence of our confidence in you to assume the title of physicians and surgeons.

I think no medical class ever encountered greater inconveniences in their attendance on a final lecture course than the present one. Within ten days of the introductory lecture, our college, with all its means of illustration, was totally destroyed in the Great

Fire. Students were scattered in every direction, many of them losing their books and clothes, and some hardly escaping with their lives. In the great flood of charity and kind remembrances that came in upon us immediately after that memorable day, we were most touchingly remembered. Before our college ruins cooled we received letters and telegrams tendering us aid of every description. Other colleges kindly offered to take our students and instruct them gratis, turning them over to us for final examinations and graduation. One college offered to share lecture rooms with us, and one other college in an Atlantic city tendered us their whole building during the entire winter. Some physicians wrote us to draw on them at sight for money, and many letters from our Alumni anxiously inquired, What can we do for our *Alma Mater?* Nothing daunted by the immense loss sustained by the faculty in the destruction of our beautiful building, our first inquiry was, where can we best continue our winter's work? Then came these testimonies of anxiety about our condition, and these were a stimulus such as no sick man ever knew. The kindness of the County Hospital committee, which nothing can efface, allowed us to avail ourselves of their amphitheatre, and in less than five days from the fire our Professor of Anatomy reopened lectures, appearing to the few students present like the first *ray* of light after a dark, horrible night. From that time to the present, lectures have been uninterruptedly continued.

During the past session, no one has regretted so much as the faculty, the necessity of abandoning many contemplated experiments and illustrations, which could have been consummated only in the old amphitheatres where this course of lectures was commenced. Another very annoying circumstance has been the disadvantageous manner of studying practical anatomy. Through the generous courtesy of the faculty of the Chicago Medical College—the first to extend to us a helping hand—you have prosecuted your anatomical researches in their building.

Cheerfully have you met all these obstacles and overcome them, laboring day by day incessantly. At the end of last week—examination week—one of your number told me that, during that period he had passed an interval of sixty-five hours without sleep, resorting to caffeine and phosphoric acid to carry him through. Such dreadful anxiety—needless, to be sure—the public know but

little of. Medical men appreciate it, however, and I can assure you that it is with peculiar pleasure that the faculty of this college confer degrees upon you this evening.

I have thought it best, gentlemen, to call your attention to a few points of interest, selected at random, knowing that at some future day your attention will be demanded by them, perhaps. I offer no apology for particularizing, because your student days have been occupied in acquiring rudiments and facts, positively known, and you have not had time to become familiar with speculative, undetermined matters in our profession, to any marked extent as yet.

It is well for us at times to pause and question, "Whither do our scientific investigations tend?" Do they corroborate, or are they subversive of, the cardinal points of Christian belief? We hear a great deal now-a-days about the conflict between science and religion. Only a few years ago geologists and theologians were considered hostile. The former advanced true yet startling statements, which the theologians considered blasphemous. Now these scholars embrace each other with sweet delight, and both find that bible doctrines are made immensely stronger by geological investigations.

The various sciences have from time to time promulgated ideas that were considered antagonistic to religion at the time, and profound agitation resulted in the minds of the devout. But farther investigation and more familiar acquaintance with new truths of science, have, without exception, managed, with satisfactory success, to place *religious* truths on an immovable foundation.

Lately physiological investigation has offered a morsel for the religious world to swallow which well nigh resulted in strangulation to the latter. What is known as the "Physical Basis of Life" doctrine was first advanced by Huxley, in Edinburgh, in 1868, in a lecture one Sunday evening, and that lecture has created an immense disturbance in the minds of scientific and religious people. Scientists are stirred up because many of them cannot agree with the learned lecturer. Many think that his conclusions are erroneous, and many others think he has made a great discovery. Theologians consider that the doctrine of "Physical Basis of Life" is totally at variance with the doctrines of revealed religion —incompatible with religious thought.

Huxley attempts to prove, to use his own words, "that there is

some one kind of matter which is common to all living beings, and that their endless diversities are bound together by a physical as well as ideal unity." That there is a community of form and structure of the ultimate particle—that is, the cell—between a man and a dog—between a man and a thistle—between a man and a whale or fungus, or marine ascidian—"between the flower which a girl wears in her hair and the blood which courses through her youthful veins"—"between the dense and resisting mass of oak or the strong fabric of the tortoise, and those broad disks of glassy jelly which may be seen pulsating through the waters of a calm sea, but which drain away to mere films in the hand which raises them from their element." This peculiar matter "common to all living beings" he terms "protoplasm," and he tries very ingeniously to show that there is a threefold unity in all protoplasms—a unity of faculty, form and substance, and that, consequently, there is a common basis underlying all varieties of vital existence.

After having proven, as he considers, the identity in all living structures, of the particular substance in which life resides, he endeavors to tell *what life is.* He claims that life is not a mysterious something—like the soul or mind added to the body, as we have always been taught—but that it is a force correlative with other forces of nature; that for aught we know it may be only a modified form of heat or motion; that all living phenomena peculiar to living beings are only physical and chemical phenomena. He and his school claim that this force is reckoned with other forces. When it occurs in the *living* beings it is to be regarded as *vital force*—when it occurs elsewhere it is only a physical force.

This ingenious theory startled the world, and many scholarly gymnasts have promptly stepped forward into the arena of public debate, and arrayed themselves into hostile parties, and had several struggles over the matter, contesting solely on its scientific merits. Many of the clergy consider the "physical basis" doctrine directly antagonistic to the spirit of revealed religion. Even some of the scientific men drag in the consideration of religion in their opposition to Huxley. Beale says: "If it were true that the facts of science really taught that all phenomena peculiar to living beings were in reality only physical and chemical, the very ground out of which religious belief springs would be dissipated. For if I were sure that the formation of my body and the action of the

living matter within me were certainly due to the properties of the particles of which my framework is constructed, how could I believe that I was nevertheless designed and created by the power and wisdom of God? If the physical views be accepted, surely the abandonment of a God, of Divinity of every kind, of immortality and free agency, is only a question of time. * * * * * If it is certain that, if the doctrines which have been lately so strongly advocated had been proved to rest upon a sure foundation, a complete and widespread revolution in religious belief would have occurred." Exactly why such a revolution would occur he does not state. He makes a great many such assertions as I have just quoted.

Again, he says: "If the formation and action of our tissues and organs are really due to the properties of the particles constituting the materials of our body, it is difficult to understand what influence a God could be supposed to exert after the particles had been created in the first beginning and had been endowed with their properties. Does not such doctrine, I would ask, strike at the root of the idea of a living God, and aim at accounting for all phenomena of this world by law, independent of will, law, or design? In such a scheme, neither a superintending Providence, nor a Personal God, nor Christianity, could have place."

Should you wish to pursue this subject farther, you will find it full of absorbing interest. The utter want of good foundation for Huxley's doctrine has been impressed on my mind thoroughly, and the same result may await you.

The Nervous System is a broad, comparatively uninvestigated field, that is just now demanding much attention. Pioneers are daily developing new facts concerning it, that explain many physical phenomena heretofore enveloped in mystery, and that elucidate the action of drugs on our systems. Difficulty of investigation of the duties and properties of any one portion of our systems, is perhaps nowhere so manifest as in the cerebro-spinal, and ganglionic systems. Their physiology and pathology are wrought out and made known only after slow, patient work of many years. The past decade has witnessed most important and rapid strides in the advance of our acquaintance with nervous phenomena, and many of the discoveries of this period tend to revolutionize and modify our notions of disease and treatment, and very many articles in

our standard works on Theory and Practice must be re-written. A whole series of groundless doctrines about disease and its treatment have been put forward, based on some supposed perversion of the function of that part of the ganglionic system known as the vaso motor nerves. Still, notwithstanding the immense progress which has been made since 1860, our knowledge of these particular nerves is not yet exact enough to afford an altogether safe ground for pathological speculation. Many of the most striking phenomena of disease, particularly those of fever, inflammation and collapse, must find their explanation in disordered vascular innervation. We are now in a better position to understand these disorders, yet our knowledge is still insufficient, and their investigation is full of difficulties and perplexities.

The history of one pathological condition, inflammation, indicates the progress of therapeutics in a great measure. Formerly it was held that all diseases depended on inflammation—that there was no disease without inflammation. Then a common cold was simple inflammation; nervous debility was inflammation; hysteria the result of a hidden inflammation; fevers were the purest inflammation. Even scarlet fever and measles were inflammation of the highest order. Now we regard this condition in most cases where it does occur, as a secondary consideration. Then this disorder was treated with the most heroic, wholesale, indiscriminate blood-letting, the inflamed part being considered too full of life, and the blood in it held there by hydrostatic principles. A friend of mine once informed me, that very many years ago, his old family physician, a man of irreproachable respectability, believed that there was only one remedy for measles, and that was bleeding. It was the rarest accident when one of his patients recovered. They died like flies in October, and, strangely enough, he profoundly believed that they died because he had not bled them early or copiously enough.

Dr. Laycock, of Edinburgh, in a recently published course of lectures on the nervous system and its influence on diseases of organs and tissues, advances some new ideas that promise to be of signal service in treating disease. According to his observations, "diseased states of organs or tissues are reversions or degenerations to a lower form of evolutions of tissues and organs." Thus, nervous debility, considered as a deficiency of trophic energy, will coincide

with anatomical and chemical tissue changes of a lower type. The production of uric acid, the *materies morbi* of gout, is an illustration. It is a product of transformation of tissues of birds and reptiles; in man it is abnormal, being a retrocession from urea. So lactic acid appears to be the result of a retrocession in muscular transformation from a higher compound. Carbons and hydrocarbons, as pigments and fats, follow the same law as to place of production. He has also introduced into the study of medicine doctrines regarding diathetic diseases which differ widely from those current, in that they are founded on the evolution of tissues and organs, and possess, therefore, a solid basis in histological anatomy, instead of merely the natural history of disease. All the tissues of the body are evolved from the two divisions of the germinal membrane—the "mucous" and "serous" layers. From the serous layer are evolved the whole voluntary motor apparatus of bones, ligaments, aponeurosis, muscles and serous tissues. Consequently they are all related to each other by common origin, and, nutritionally and diathetically. From the mucous layer is evolved the nutritive apparatus. The circulatory system springs from both the serous and mucous layers. Keeping in mind the *origin* of the various tissues of the body, diathetic diseases and degenerations are easily comprehended. Especially easy is it to comprehend the hereditary tendencies to these diseases and degenerations. By a consideration of diathetic principles, medicines formerly administered with great doubt can now be given with more confidence, and disorders uncontrolable by ordinary routine treatment, more readily succumb to diathetic remedies. A knowledge of the particular diathesis of each patient, suggests to us at once the particular organs or tissues liable to be affected in each, and can be used as an accurate guide to sound and definite conclusions.

In the same manner does he classify skin diseases, basing his classification on the threefold nature of the tissues (the mucous, vascular, and fibrous or connective, including the muscular) which, each or all, may be affected.

Guided by the law of evolution, the same author works out a still more interesting point in therapeutics. Many years ago the late Dr. Turner, of the University of London, and Sir Robert Christison, made experiments on plants with opium and similar drugs. They showed that a community of influence of the drugs

existed as to the tissues of plants and animals. According to Dr. Laycock's method, the motor vis nervosa is an evolution of the directive and "purposive" qualities as shown in plants as well as in animals—in short, in all living things. Hence, it follows that drugs believed to act exclusively on the nervous system, act also on the tissues. In this way is explained the action of strychnine in certain forms of emphysema with bronchitis; and colocynth, aloes, senna, wormwood and chamomile are referred to as drugs possessing a combined influence on the tissues and nervous system. It is obvious that such a principle must modify all our therapeutical views.

The phenomenon of reflex action is one of interest, and lately has proved to be the key to a very important discovery. The simplest illustration of it is, in tickling the bottom of the foot and observing the spasmodic jerking of the leg away from the object producing the tickling. Every physician knows the explanation of the jerking motion; and many, very many intelligent people who are not physiologists understand that reflex action is a system of telegraphing on the nerves, and explain the process thus: "The fingers tickled the foot and certain nerves conveyed that sensation to the spinal cord and brain, and the mind sent down a despatch along certain *other* nerves, which contracted the muscles and produced the jerking." To put it a little more learnedly, the vis nervosa, or nerve force, travels upwards on sensitive nerves, and downwards on motor nerves. Investigation proves that this force never travels in any other direction; and furthermore, that all growth, nutrition and development proceed in the same, and in no other direction; and still farther, that degeneration of nerves passes in precisely the same direction. Suppose a motor nerve be divided at the elbow, what results? Degeneration of that nerve along its course to its minutest termination down into the hand and fingers, and paralysis of the parts thus supplied. Hence, conversely, if we find paralysis of any particular part supplied by a certain nerve, we conclude that that nerve is out of order. Strabismus occasionally occurs in this way. Again: suppose we divide a *sensory* nerve at the elbow, what results? Degeneration of that nerve from the section up the arm into the brachial flexus—into the cord and along its individual filaments up the cord into the

base of the brain. Not unfrequently, sensitive fibres run up into the hemispheres, the organ of thought and perception. If one of these fibres be destroyed, sometimes disease of the mind or insanity results. Hence it is we understand how some diseases result in broken minds—how injuries eventuate in insanity. I know a man now in an insane asylum for the fifth or sixth time, made crazy by the excessive use of tobacco. Undoubtedly the cause was the effect of smoking on the sensitive filaments of the pneumogastric. Laycock mentions a man who had his finger jammed in the door of a rail car, so that a portion was squeezed off. Now follow the symptoms as they developed, and see how the degeneration of the sensitive nerve proceeded. I quote the writer: "The finger healed; but in the course of a month after the injury, he had a slight tetanic symptom, and in a few days after that, a sort of a fit. He now also complained of numbness and strange sensations in his hand and arm, twitching of the face, and a sense of weariness and loss of strength, so that although previously in robust health, he was unable to undergo even slight exertion without a feeling of fatigue. He resumed his office work for six months, but slowly got worse, becoming highly nervous and dreadfully depressed. He next had numbness of the body, and faintness; then by degrees his powers of speech, of motion and vision failed, and at last he died, eighteen months after the accident."

We find attempts have been made to teach that there are distinct cerebro-spinal centres set aside for the regulation of distinct trophic areas. It is claimed, that for the maintenance of so conspicuous a harmony of function of the trophic system over an extensive and complex series of areas, there must be one centre, or a series of centres. Admitting this claim, renders easy the explanation of very many obscure diseases, and explodes many pet theories of diseases and symptoms.

In continuation of the discovery of the law of degeneration of nerve filaments, a discovery prompted by the phenomenon of reflex action, I wish to allude for a moment to a region of the cord, named by Waller and Budge the cilio-spinal tract. By experiments on this tract, certain results can be produced on the eye. It is situated in the neck. Claude Bernard describes a similar tract, but he embraces more area, and denominates it the "oculo-spinal" tract. Certain nerve filaments coming off with the second

pair of dorsal nerves—the lower part of this oculo-spinal tract—undergo degeneration upon section, *from* the cord, that is, *centrifugally;* hence, the conclusion is, these filaments must be *motor* filaments, because motor nerve force, motor nerve growth and degeneration travel *from* the cord. Section of motor nerves means paralysis to some organ or part, whatever it may be; and upon cutting off these motor filaments of the second dorsal nerves, we naturally look out for this paralysis, and we find it in the eye—the iris being dilated. Hence dilation of the iris means paralysis. In those diseases where we have pupilary dilation and contraction we naturally conclude we have another point of explanation of the effects of disease on our systems. Cannot we obtain some clue to the effects of the solanaceæ, whose uniform effect on the eye is dilation of the pupil? Do we not find an important suggestion, too, as to the antagonistic effects of opium and belladonna? It is more easily comprehended how these remedies act in the delirium of fever and of tremens. Bernard has shown that the nerves coming from the last cervical and first and second dorsal vertebræ direct the innervation of the tissues of the eye upon which the protrusion of the eyeball, exophthalmos, one of the symptoms of heart disease, depends.

Laycock continues: "Now this region is a most important region clinically, both as to neurotic, functional and structural diseases of the heart, such as nervous palpitation, angina pectoris, and as to dropsies of the thorax, neck and arms."

The revelations of the spectroscope are astonishing, and it seems to me as though we are familiar with only one of a hundred, perhaps a thousand, invaluable helps it will some day yield to us. The one help I refer to, is, its detection of blood stains—an item often of thrilling interest to medical men and to society.

The instrument has been explained and exhibited to you by the Professor of Chemistry. The delicacy and certainty of its revelations most profoundly impress the merest tyro, and it seems to me that in medical experience will it prove of most important service. It demonstrates the presence of common salt in the atmosphere, for salt is present everywhere; it pervades the earth and air universally; it dances in the sunbeam; and we can by no means get rid of it, do what we will. We cannot leave a clean platinum wire exposed to air a moment without particles of sodium becoming

attached to it. The most delicate chemical manipulations never have determined this fact, yet the spectroscope makes it clear. The smallest possible amount of any salt dropped into a tub of water cannot be detected by the most careful tests, yet the spectroscope quickly detects it. A physician, convinced that some cases of typhoid fever in one of his families were caused by drain poison getting into the well that supplied drinking water to the family, determined on testing the well water. Chemical tests revealed nothing wrong. The residue from evaporation of some of the water yielded no very positive result with the spectroscope. He then put some lithium into the house drain, and after several hours repeated his spectroscopic observation, and at once the brilliant, beautiful red line which lithium only produces, appeared. Plumbers soon found the defective sewer pipe, and no more typhoid has occurred in that house.

Astronomers have applied spectroscopic observations to the heavenly bodies, and the chemical nature, the physical constitution, and, within certain limits, the temperature and the density and velocity and direction, whether toward or from us, of many of the stars and planets, have been accurately ascertained. They announce that Saturn has an atmosphere similar to ours; so has Mars; that there is hydrogen in the sun, etc.

Microscopists are having stands constructed to which they attach spectroscopes, and apply observations to infinitely small objects. I fancy that in this way is this wonderful instrument to be of signal service to the medical man in carrying on minutest and most certain investigations in the products of disease, and in determining the exact nature of zymotic poisons, and settling the perplexing question of disease germs, beyond a doubt. A simple blood corpuscle, dried and shrunken, and having lost all semblance to a corpuscle, can scarcely be recognized after moistening, by the most powerful microscope, yet the spectroscope indicates it quickly and unmistakably. Spectra of the various products of our bodies are now being recorded by observers, and I imagine the time is not far distant when this instrument will afford as rich means of clinical investigation as the miscroscope or stethoscope. Possibly the time is not far distant when every physician will have a pocket spectroscope, that he can devote to clinical purposes, and tell precisely the nature of the action, whether deficient or too abundant,

of the skin, kidneys, lungs, liver, and every other organ of the body. This instrument will, some day, be equally esteemed with the stethoscope and sphygmograph, and when these three go hand in hand with the physician in his investigations, clinically, we will doubtless hear of some enterprising Doctor applying the autophoroscope to sounds derived from the various forms of thoracic diseases, and to those of intestinal gurgling in bowel disorders, obtaining tracings as accurate and reliable as the sphygmograph yields, and upon them found some new and startling disease theory.

In the great work which lies before you, gentlemen, we bid you go forth full of bright hopes, and strong in your determination to overcome difficulties by patience, courage and perseverance. But remember always that the one object of your lives should be to seek after and maintain truth. Be true to yourselves, and you will be true to your professional calling, than which there is nothing higher and grander in this life. Truth should penetrate every act of your professional, as of your private life. It will make you careful in diagnosis and sound in therapeutics, because it will enable you to sift the apparent from the real—the false from the true. It will help you to weigh symptoms, to estimate them at their true value, and by knowing accurately, that is, truthfully, the inward conditions, of which symptoms are but the outward expression, you will be able, with full confidence, to apply the true remedy.

But success of this kind is only obtainable by the persistent practice of truth in every minute particular of your daily life. You cannot play fast and loose with truth and falsehood, for one or the other will, in the end, be sure to prevail: and remember that "falsehood is never so successful as when she baits her hook with truth; and that no opinions so fatally mislead as those that are not wholly wrong, just as no watches so effectually deceive the wearer as those that are sometimes right."

After the close of the Valedictory the Benediction was pronounced by the Rev. Chaplain, and the assemblage dispersed.

MILITARY TRACT MEDICAL ASSOCIATION — *Thirteenth Semi-Annual Meeting.*

Pursuant to adjournment, the Thirteenth Semi-Annual Meeting of this Association convened at Masonic Hall, in Galesburg, Tuesday, January 9th, at 10 o'clock, A. M., S. P. Breed, of Princeton, as President, Herbert Judd, of Galesburg, Secretary. After reading the record of the previous meeting, the Board of Censors reported several candidates for membership, who were elected Dr. Breed then called Dr. Reece to the chair, and presented the Association with a gavel, accompanying the act by the following very pleasant and appropriate remarks, which were kindly received by the members present:

Mr. President, and Gentlemen of the Military Tract Medical Association:

As a slight token of my esteem for the members of this body, and a sort of index of the deep interest I feel in the continued success of this Association, I beg leave to present to you, at this time, this *gavel.* While it will be at once apparent to all that this little instrument is a type of *authority* and *order*, it will be recognized only by the advanced student of physical science that it also represents, most appropriately, a certain measure of reserved or potential power, called statical energy. The organic structure of which the wood of this mallet is composed, may be said to represent just that amount of those physical forces, light, heat, electricity, etc., in a latent or statical condition, which will be restored to a sensible or dynamical condition by the resolution of this structure into its original inorganic elements by combustion or destructive metamorphosis, and thereby display the measure of its organic dynamics. These forces have been gradually stored up in this structure during the growth of the wood, from the surrounding media—the air and the earth—by the genial rays of the distant sun, to be given out again, on the oxidation or destruction thereof, in the form of light, heat, electricity, mechanical power, or some other correlative display of equivalent force, which may, or may not, be utilized in the arts or necessities of civilized life.

In this representation of the physical forces, however, this organic structure does not differ essentially from all other kinds of wood. But, in selecting the particular kinds of wood for this instrument

of command, I have not been unmindful of those qualities which I thought would be appropriate to the occasion, and moreover, significant of the traits of character which I desire more particularly to elucidate.

The handle of this gavel is made of white cedar, or arbor vitæ. The propriety and fitness of this selection will at once appear, I hope, when it is remembered that, by a vertical section of the human cerebellum, just such a display of the white and gray matter is made, as to give, in miniature, a perfect picture of this beautiful tree, and is therefore named by all anatomists, "the arbor vitæ" in brain. Hence, gentlemen, you will now understand, if you have not done so before, that each one of us, unconsciously, perhaps, carries about constantly a perfect image or likeness of this "tree of life" engraven on our smaller brain. If this be so, it becomes doubly interesting to us, then, to know what are the peculiarities and most striking qualities of this tree.

It is an emblem of *persistence* and *fidelity;* two very important requisites for success in any business or profession. It is one of the finest *evergreens*, and is, in consequence, often selected as the ground-work for festoons, wreaths, and garlands, to deck the brow of the hero, the warrior, and the poet.

This tree is much employed by horticulturists and landscape gardeners for wind-brakes, screens, and ornamental hedges, and therefore may represent a shield—protection, and a higher order of *taste—refinement.*

In these qualities it is significant of the great mission of the true physician. Our first and greatest duty is to protect and shield mankind against the fell destroyer, disease. Indeed, it is the *privilege* and *duty* of the physician to so apply his knowledge, and so regulate his deportment, as to be, at the same time, a *protection* and *ornament* to society.

This tree is very tolerant of the pruner's shears. It may be trimmed, cut back, or trained to almost any shape. It may be restrained in *one* direction and stimulated in another, to almost any desired extent. Hence, it has become a type of *patience, docility*, and *tractability*. From the rude touch of the meddlesome it only returns an agreeable, aromatic fragrance; thus returning good for evil, and thereby illustrating the golden rule. So much for the handle.

The head of this gavel is made of apple wood. The most striking characteristics of this wood are, *firmness*, *solidity*, and *weight*, with a marked susceptibility of a high polish. It will not be denied that *firmness* of *purpose*, *solidity* of *reasoning*, and *weight* of *character* are *prime* elements to success for the physician.

This tree is remarkable for its *symmetry*, *thrift*, and *hardiness*—most excellent qualities, I assure you.

As a shade tree, it is scarcely inferior to any other; and, during its season of foliage, flowering, and fruitage, it is unsurpassed for its beauty of form, fragrance of flower, and abundance and value of its fruit. When we consider fully the value everywhere attached to the fruit, so grateful to the palate, so necessary to the health, so convenient and acceptable an offering to our guests, on almost all occasions, so diversified in its *role* in the culinary art, and for making cider and vinegar, we have an array of qualities unequaled by any other tree known to man; so that we even doubt, sometimes, whether the "Pomum Adami" is really the *apple* that our primeval mother Eve ate, and is still sticking in our throats.

But there is one other peculiarity about this tree and its fruit that I desire to call your attention to. It is the great improvement made in the quality of the fruit by judicious and appropriate cultivation. The parent of our common apple is admitted to be the wild crab of Europe. Would you know what can be done by patient labor in horticulture, persistently directed by the hand of science? Compare the little, gnarly, sour, wild crab, with some of our late varieties; such, for example, as the Bellflower, the Golden Pippin, and Wagoner, and you have the answer. This tree, then, above all others, is a type of progress. How appropriate and significant, then, is it to the live physician.

But last, though perhaps not the strangest of all, is the fact that this tree has its enemies—its parasites. In this respect, too, it is interesting and instructive to us. With all our personal efforts to benefit mankind, all our self-sacrificing devotion to relieve human suffering, we, too, have our *enemies*—our *parasites*. There are men among us in the community, who are so deaf that they never once hear the voice of sympathy, if it come from a physician. They are too blind to see the lenient hand as it brushes the tear of bitter anguish from the faded cheek, and too obtuse to properly realize that there is any virtue in the many sleepless nights, and days of

toil, through wet and cold, to relieve the sick, the suffering and the needy.

Yes, gentlemen, there are such men found in every neighborhood, whose sensibilities are so gross and perverted, that they can see nothing praiseworthy in all this, and their influence is destructive of all good, and inimical to the most exalted virtues. They are like the vile *borer* in the heart of the good apple tree, and the coddling moth, and disgusting caterpillar, that riot among its flowers and prey upon its branches.

Gentlemen, we, too, like the good apple tree, have our parasites. Unfortunately there are men in every community who live, thrive and fatten on our very blood. They gather from our great storehouse of knowledge, but, ingrates as they are, they make no return. They even affect to contemn the very source of their success. They filch an *idea* here and a *fact* there, which enables them by artful dodges, cunning tricks and bold effrontery, to gain a temporary popularity with the ignorant, the credulous and the malcontent, whom they generally manage to fleece, spoil, and leave half dead, for the regular physician (the Good Samaritan) to pick up, comfort and care for as best he can.

These traveling mountebanks—these itinerant charlatans and nostrum venders—are like the pestiferous bark-lice which suck the juices, and greedily devour the pabulum intended to support the legitimate branches and tender twigs. These unscrupulous pretenders live, like other parasites, by a system of destruction, fraud and downright robbery. But their days are numbered. The skirmish-line of the great vanguard of progress, working patiently away, will, inevitably, *soon* drive them forever from the field. Then shall medicine see the dawn of a brighter and a better day. In view of this certain event, gentlemen, let us take courage, toil on and hope, for "surely the morning cometh."

If these few remarks shall serve, in any degree, to stimulate the weak, comfort the tried, and encourage the faltering, they will accomplish all I intended.

Dr. E. S. Phillips then read an essay, reviewing the history of medicine from an early period to the present time. This was an able and interesting production, and was accepted by the association with a vote of thanks.

Reports from Standing Committees. Dr. M. Reece, from the Committee on Surgery, reported a new method of treating strangulated hernia, referring to the practice of Drs. Cumming and Morton, of Louisville, Ky. This report was continued in detail. Dr. Reece favored the operation, which consists of simply puncturing the hernia tumor with a small canula needle, permitting its gaseous and fluid contents to escape, thus reducing the bulk and facilitating replacement.

Dr. Reece also placed on exhibition one of "Squire's vertebrated prostatic catheters," which he had had occasion to use with success. Dr. Hamilton, of Galesburg, spoke favorably of the lead catheter. Dr. Hamilton also presented, with history, the bones from a recent case, showing condition of knee joint from anchylosis of long standing. These reports were of much value to the association, and received due consideration.

Materia Medica. Dr. Webster, of Monmouth, read a paper, showing, in a clear and scientific manner, that this branch is in rapid progression, its study no longer that of a mass of incoherent precepts. To demonstrate the principles set forth in this paper, Quinia was chosen.

Dr. Marshall, of Monmouth, spoke of Digitalis in a way to elicit the views and experience of the members present. "Does it act as an arterial sedative by diminishing the force and frequency of the heart's contractions? or does it possess the opposite quality of stimulating and increasing the cardiac action?"

After this discussion morning session adjourned.

AFTERNOON SESSION.

Dr. C. A. Lambert, of Galesburg, upon *Ophthalmology*, read a paper on Trachoma; several cases were reported from his practice, with treatment and results. This report was the most scientific of any given, and received with benefit by the association.

Obstetrics. Dr. H. S. Hurd, of Galesburg, gave a statistical report from fifty cases, as occurring in his practice during the year past. This report was valuable, particularly to the younger members of the profession.

Upon the *Practice of Medicine* no reports were given from the standing committee. Interesting verbal reports were made, when the association was addressed by Dr. J. E. O'Brien, of Chicago.

His appeal in behalf of Rush Medical College met with worthy response. It was decided that the plan of scholarship was the most practicable, as but few members were present, and that a committee be appointed, composed of one member from each county belonging to the territory of the association. Said committee being appointed, was instructed to canvass among the members of the association, that one or more scholarships might be secured by the payment of $500 each. On motion, Knox county was allowed two members on said committee, which is as follows:

Dr. Wm. Hamilton, Galesburg, Knox county.
Dr. John M. Morse, " " "
Dr. G. W. Crossley, Princeton, Bureau county.
Dr. Hiram Nance, Kewanee, Henry county.
Dr. W. D. Craig, Aledo, Mercer county.
Dr. D. McMarshall, Hopper's Mills, Henderson county.
Dr. J. R. Webster, Monmouth, Warren county.

Under *Miscellaneous Business*, Dr. Aldrich presented a stomach from a late case that had been of doubtful diagnosis while under treatment, which was pronounced to have been chronic gastritis.

The Committee on Necrology were instructed to report at the next meeting on the deaths of Drs. Trimble, of Sagetown, and Chamberlain, of Princeton.

Eighteen delegates were elected to attend the State Medical Society in May.

Ten delegates were elected to attend the American Medical Association.

The following standing committees are to report at the next annual meeting in June:

Censors—J. R. Webster, S. M. Hamilton, Hiram Nance.
Essayists—A. V. T. Gilbert, J. R. Webster.
Surgery—M. Reece, S. K. Crawford, J. C. Smiley.
Practice of Medicine—Cephas Parks, David McDill, E. L. Phillips.
Materia Medica—Hugh Marshall, D. McMarshall, E. F. Purdum.
Obstetrics, and Diseases of Women and Children—J. W. Hensley, A. Klingberg, N. D. Sterling.
Ophthalmology—J. H Thompson.

Some forty members were present. This meeting was of interest and profit to all, being the most thoroughly practical of any meeting held by this association. The next meeting will be held on the second Tuesday in June, at Galesburg.

Anæsthesia, Hyperæsthesia. — Introductory Lecture by WALTER HAY, M.D., Asst. to the Prof. Prin. and Prac. Med., Rush Medical College.

Gentlemen: In appearing before you at the courteous invitation of the accomplished gentleman who so ably fills this chair, and by the permission of the Faculty of Rush Medical College, I desire to acknowledge, in advance, my appreciation of the very great honor which they have done me in assigning to me the very pleasing duty of instructing you in the outlines of the diseases of the nervous system. I say the outlines of the subject, for of a subject so vast, so important, so intricate, and so intimately correlated with every pathological problem which can ever be presented to you in your future professional career, it would be impossible for any one, in a single course of lectures, to do more than to designate the outlines, to indicate the prominent landmarks, and to lay down the principles which should constitute the bases of your observations and studies of details hereafter.

In claiming for the pathology of the nervous system the most important place in the whole cycle of the physician's practical studies, I may cite this fact in evidence, that just in proportion to its development and differentiation, is the organism elevated in the scale of creation; and just in proportion to its restriction is the organism degraded. And this is true of the whole of organized nature in general, as of every individual in detail.

Beginning with the lowest member of the animal series and noting carefully the superaddition of one function after another, to each organism, as we ascend the scale of creation, as their relations become more and more complicated, we shall perceive that coincidentally with every additional function, an addition has been made to the nervous apparatus for the domination and control of that function. So also in the reverse order, in descending from

the highest to those lower in the scale of organized beings, as function becomes more and more restricted, as the relations of the being become more and more contracted, we shall observe the abstraction of portion after portion, ganglion after ganglion of the nervous system.

Again, turning for our illustrations to the field of pathology, we see the same parallelism between abolition of function and loss of structure as has been already adverted to in the physiological series; loss of voluntary motion, with lesion of the antero-lateral columns of the spinal cord, loss of sensation, with disorder of the posterior gray substance of the same.

Magendie, one of the fathers of modern physiology, called these the functions of relation, so especially is their office an internuncial one—that of maintaining our relations with all that is outside of ourselves, and the correlations of every internal organ with all the others, by which means structural integrity, and, necessarily, functional equilibrium, is maintained.

But there is one prerequisite essential to a correct appreciation of the morbid conditions of the nervous system which we are about to discuss—if such distinctions were admissible, I might say more essential than to that of any other field of research—and this is, a knowledge, comprehensive and extensive, of the anatomy and physiology of the nervous system. Whatever you may be inclined to neglect, in the course of your studies, cultivate these with all the ardor in your power. For this you have facilities which have been enjoyed by few; facilities by means of which you are instructed directly in the operations of physiological laws, which have become known to your predecessors only through long years of patient toil and laborious induction.

There is probably, at this time, no institution in the country where the science of physiology is taught more thoroughly, more practically, and more efficiently than in this; and very few, if any, where the advantages for the prosecution of this all-important study even approximate to those which are afforded to you here. Not being a member of its Faculty, nor even one of its graduates, I feel the more freedom in expressing an honest opinion upon this head.

Understanding then, thoroughly, the mechanism of this organism, and the laws governing its operations, structure and function,

anatomy and physiology, you will then be prepared to appreciate the perturbations which they may sustain under the operation of certain determinate causes, and, conversely, the causes to which these disturbances are due. But at this point it is necessary for me to warn you of the importance of bearing this fundamental truth in your minds, without a knowledge of which your ideas of nervous pathology will be mere speculation, and your therapeutics empiricism. The truth which I wish to impress on you is this, that for every variation of functional energy there is a change of structure coincident. All diseases of the nervous system, as indeed all others, necessarily involve organic changes.

Now with regard to the causes which determine disturbances in the nervous system, it will be necessary for you to consider a very wide range of agencies; for the day has gone by when any theory of specific causation can be regarded as sufficiently comprehensive to satisfy the inquiring mind of the rational physician. It will not be sufficient for you to determine that the convulsions of one patient were caused by dysmenorrhea, because the insanity of another may have the same antecedent. This sort of ætiology will do well enough to accompany the therapeutics which prescribes "castor oil as good for the diarrhœa," and opium as good for metritis, and, combined with a little more knowledge of the same sort, goes to constitute a popular "ism," termed empiricism, with which you of course have nothing to do.

You must study the nature and influence of concurrent causes. Study the relations, to your patient, of locality, climate, hereditary proclivities, diathesis, sex, age, social and sanitary condition and surroundings, occupation, personal habits and characteristics. For upon this head it will be necessary for you to remember, what has been already said, that, as the nervous system is the medium by which we are brought into relation with everything, objective and subjective, with all that is without and all that is within ourselves, by its disturbance these relations must necessarily be perverted; and conversely with their perversion the nervous system will be disturbed.

In a word, just as the engineer fixes forever the exact locality, to a hairsbreadth, of the point from which his observations are made, by measuring the bearings and distances of many surrounding, permanent objects from it, and, conversely, of it from them,

so do you measure the bearings and distances, so to speak, of all these concurrent causes upon the case before you, and you will thus truly make a diagnosis (which is a knowing of something through some other things,) and be enabled thereby to arrive at a true therapeusis.

For example, when a patient is suffering from pain, it will not be sufficient for you to give him morphine, because morphine will allay pain; but, having first determined the cause of the pain, or, at least, its nature, and the absence of any contra-indications, then remember what Dr. Chambers has so eloquently said in this regard: "Pain is the cry of a starved nerve for food." Now the blood is the "pabulum vitæ," and hence the pabulum nervorum. Morphine, by paralyzing the vaso-motor nerves, permits the relaxation of the middle or muscular coat of the arteries, and the consequent distention of the arterial calibre, thereby diminishing the rapidity of the blood current and the waste of tissue, allowing thereby more time for repair. The integrity of the nerve tissue is thus protected from the disintegrating chemico-vital agencies, and it is therefore enabled to convey a normal and not a morbid and exaggerated sensation to the sensorium.

In describing to you the diseases of the nervous system as they are at present understood, I shall do so in the reverse order to that in which they are usually arranged. That is, instead of beginning with the diseases of the eucephalon, and descending to those of the spinal cord, which is the course usually pursued, and which has the sanction of time and prescript, and is a progress from the complex to the simple, I shall follow a direct physiological sequence, in the development order, and beginning with the lesions of the peripheral nerves, shall proceed to those of the spinal cord, and lastly to those of the eucephalon, passing upward from the simpler to the more complex.

To quote the language of a recent English authority, "the inductions which we get by observing the simple, may be used with success to disentangle the phenomena of the complex; but the endeavor to apply the complex and obscure to the interpretation of the simple, is sure to end in confusion and error." The higher faculties are formed by evolutions from the more simple and elementary, just as the more special and complex structure proceeds from the more simple and general; and in the one case,

as in the other, we must, if we would truly learn, follow the order of development.

From the intimate correlation of every portion of the organism, by means of the nervous system, with every other, you will readily understand that it is impossible for any one portion to be diseased without interfering to some extent with the health of all the others. This is a general proposition, applicable to all diseases and derangements whatever. Now when this internuncial agent, by means of which this correlation is maintained, becomes itself the seat of disease primarily, either in its centres or in its peripheral ramifications, the disturbances of all the other portions of the organism will be so much the more certain, so much the more prompt, and so much the more clearly manifested.

Our knowledge of the diseases of the nervous system has followed, step by step, advances which have been made in our acquaintance with its physiology.

But few years, comparatively speaking, have elapsed since the pathology of the nervous system began to be investigated as a distinct department of medical science. Formerly, symptoms which are now traced to their origin in diseases of the nervous system, to quote the quaint expression of Sir Charles Bell, were classed as "*nervous* symptoms," which was another way of saying that the physician was not expected to investigate or explain them.

In using such language in 1811, the father of modern physiology could scarcely have expected its applicability to continue in force for more than half a century; but what was true of all, or nearly all, at that day, is unfortunately true of many to-day, and the epithet, "nervous," has at this time come to be considered an excuse for professional ignorance.

Indeed, the whole subject was a terra incognita previous to the appearance in 1811 of Sir Charles Bell's little work, entitled "An Idea of a New Anatomy of the Brain, submitted to the observation of the author's friends."

Previous to this era, it is true, the way had been prepared by Monro, previous to 1767, who discovered that the ganglia of the spinal nerves were formed on the posterior roots, and that the anterior roots passed by the ganglia. Santormi and Wrisberg observed the two roots of the fifth pair, and Prochaska, in his work, "de Structura Nervorum," in 1779, and Sœmmering, noticed the

resemblance between the spinal nerves and the fifth pair. But these discoveries had remained useless and sterile in their hands, having neither been traced backward to any physiological principle of action, nor forward to any function in the animal economy. But to Sir Charles Bell may with justice be conceded the honor of having initiated a new era, the era of accurate observation and logical induction.

Coincidentally with Bell, Magendie, in France, published his experiments on the roots of the spinal nerves and on the fifth pair. (The claim of priority of discovery was disputed by these observers.) Flourens and Longet in France, and Muller in Germany, labored assiduously in the same field, and made valuable contributions to this branch of medical science. But for the next great step in the knowledge of the nervous system, we are indebted to Marshall Hall, whose discovery of the functions of the true spinal or excito-motor division of the nervous system has thrown a flood of light upon the field of pathological investigation, not exceeded in brilliancy by that of Bell.

In our own day, rapid strides are being made daily, almost, in this department of pathology, and the researches of Solly, Reid, Jones, Seiveking, Ratcliffe, Reynolds, Claude Bernard, Rabuteau, Cyon and Ludwig, Meyer, Sequard, and a host of others, have given a greater impulse in this direction than has ever been imparted to it in any one generation. The investigations of Brown Sequard upon the pathology of the spinal cord and sympathetic nerve, and those of Campbell in our own country upon the nature of continued fevers and their nervous relations, and upon the excito-secretory system, have been especially valuable. And still later, Hammond has brought down the data of science to the present day, and given us the gist of all that is known upon the subject.

The ætiology of the diseases of the nervous system is coextensive with that of diseases in general. Without attempting to dogmatize upon this subject, by endorsing the theory of the neuropathists, of the invariable nervous origin of diseases, it is reasonable to say, that, if diseased processes do not invariably commence in disturbances of the nervous system, it is undoubtedly through this organism that they first declare themselves; and hence, for the

causes of nervous derangements you may look to all the possible morbific agencies that the Professor of Practical Medicine has enumerated in his comprehensive ætiological series. But remember this, which you may impress upon your minds as an axiom, that for every variation and innervation, for every modification of function, there must be a corresponding modification of structure; perfection of functional energy, which is force in action, essentially involves integrity of structrue. What is true of the mass, is true of its constituent parts.

Just as in cerebral hæmorrhage, when the laceration and destruction of the brain-substance involves total suspension or destruction of sense and motion, of all cerebral action, so also in epilepsy, that yet unsolved enigma, rest assured there is change in cerebral structure, even though it may yet elude the most delicate microscopic investigation. The error is not one of generalization, (the results of logical induction are more accurate than those of microscopic observation), but of observation.

The truth of this proposition is self-evident from such a multitude of observations, that when other observed facts seem to be incomprehensible under the law, it is safe to lay them aside as unclassified facts, with the certainty that with improved means of observation, and broader bases of classification, they will eventually be reducible to the general law.

This proposition, indeed, underlies the phenomena of life itself. Life is not structure, organization, but is conditioned thereupon. Force in action, manifested through organization, is the expression of life.

In your consideration of the innumerable phases of nervous disease which will be presented to you in your future career as practitioners, there will be found, to borrow the language of mathematics, one constant factor. And a knowledge of this will materially aid you in forming your diagnosis. Bear this well in mind, that, no matter what may be the apparent symptoms, whether indicating disturbance of function in the direction of excess or defect, convulsion or paralysis, delirium or coma, the one constant element is debility, depressed vitality, loss of force. There can be no such thing as plus vitality. The maximum result of the co-operation of perfect functional equilibrium, with perfect structural integrity (for indeed the one condition necessarily involves

the other), is perfect health; beyond this point it is impossible to go. Hence, there is no such condition as plus vitality. True, one function may be performed in excess of the normal standard, but it will be at the expense of all the others. Muscular motions may be performed excessively, as in the case of convulsions, but it is because the functional energy of the hemispheres is too feeble to maintain their domination and control by means of which the spinal cord is kept in subjection to the will. On the other hand, the hemispheres may be irritated to excessive activity; cerebration may be performed with apparent lightning-like rapidity, as is seen in some phases of delirium and of insanity, but it is at the expense of coherence and intellection.

In the course of these lectures, gentlemen, I shall not detain you with quotations from authorities to sustain my positions. The truth or falsehood of these I shall expect you to demonstrate to your own satisfaction by reference now to the standard authors within your reach. It will be my endeavor to give you simply general outlines, covering as large a space as possible, which you will fill in for yourselves by subsequent study.

A systematic study of nervous pathology, ought to begin, as a first step, with an investigation of the derangements of the sympathetic or ganglionic nervous system, so called. But unfortunately, medical literature is singularly barren upon this subject. Owing to the intimate dependence of organic processes upon the integrity of this division of the nervous system, and the extreme danger to the life of the animal, incurred as a consequence of any experiments upon it, little has been done in the way of the determination of its function by actual experiment; hence, but little progress has been made in comparison with what has been learned in other branches of this department of pathology. Indeed, from the very intricacy of the correlations, it is almost impossible to isolate the pathology of the sympathetic from that of the rest of the organism. What we know of the pathology of this portion of the nervous system—for which we are indebted to Pourfour du Petit, Magendie, Alcock, Claude Bernard and Brown Sequard principally—may be condensed briefly thus: In cases where the influence of this portion of the nervous system is withdrawn by disease or injury, the effects manifested are dilatation of the blood-vessels, afflux of blood, and increase of vital properties. These effects are likewise produced by

certain drugs. When, on the contrary, the influence of this nerve is increased by irritation, either mechanical or galvanic, for example, there will ensue contraction of the blood-vessels, diminution of blood, and decrease of vital properties.

This general fact is applicable practically, thus: in those conditions characterized by dilated blood-vessels, various congestion, general and local, we assume the proximate cause to be paralysis of the sympathetic nerve; and hence, the proper remedies would be those which would contract the blood-vessels—hence the great value of the bromides.

The pathology of this portion of the nervous system is best known through the effect of injuries to the fifth pair of nerves, and the pneumogastric.

Injuries to the former frequently result in disorganization of the eyeball, commencing with opacity of the cornea, and ending with total destruction of the organ whose nutrition is dependent on the integrity of the ciliary or ophthalmic ganglion of the sympathetic. This has been demonstrated, experimentally, often.

So too, compression, or section of the cervical ganglia of the sympathetic is followed by contraction of the pupil, retraction of the ball of the eye, and consecutive inflammation.

On the other hand, irritation of the cervical sympathetic, either mechanical or galvanic, will be followed by dilatation of the pupil and an anæmic condition of the cornea.

It is probable, although it has not yet been demonstrated by actual observation, that injury to the ganglia on the posterior roots of the spinal nerves, in infancy, or in intra-uterine life, may be the cause of defective growth and nutrition in children.

The relation of the ganglionic nervous system to the *heart*, is demonstrated very frequently in the course of surgical practice. Experiment has demonstrated, that crushing the brain or spinal cord occasions a sudden cessation of the heart's action. But the same effect is produced by crushing the stomach, or a limb, or the foot; and this, too, after the careful removal of the brain and spinal cord; from which it is clear that the effect could have been produced by the influence of the sympathetic alone. Some of the cases of sudden death occurring after surgical operations, or after injuries by no means essentially mortal, can be explained in no other way.

I can recall at this moment one such instance within my own observation in which death resulted from the passage of a wagon wheel over the knee of the patient, crushing the joint. This is what is termed *shock*, and it is exemplified sometimes under the influence of intense mental excitement, particularly where the heart is already weakened by pre-existing disease.

In pursuance of the plan indicated to you already, i. e., to begin with the simplest form of derangement of innervation, and proceed gradually, in the order of physiological development, to the more complex, we will begin our studies with those disturbances of innervation involving primarily and essentially the sensory fibres of the peripheral nerves, and the function of common sensation.

Sensation may be disturbed in three directions: by diminution or abolition, by exaltation, and by perversion.

The disturbance of innervation by diminution of its intensity, or its total abolition, is that condition known to pathologists as *Anæsthesia*, a word derived, like most of our scientific technology, from the Greek, meaning loss of feeling. We frequently find this condition expressed by the term "paralysis of sensation," but much confusion will be avoided by the abolition of the term paralysis from this association, and by limiting its application to loss of motor power alone.

Of the various forms of anæsthesia, we will first consider peripheral, or local anæsthesia; and this may be occasioned by any one of three conditions:

First. Morbid changes in the extremities of the nerve or nerves implicated, by means of which they are incapacitated from receiving normal impressions, as illustrated by the numbness produced by intense heat or cold, or by the action of certain chemical agents, such as carbolic acid, applied to the surface.

Second. By incapacity in the sensory or afferent fibres of a nerve to convey normal impressions to the brain, as illustrated by the interception of this conducting power by means of a ligature surrounding a limb, or by section, or by crushing or bruising of a nerve. And—

Third. The third condition which would be manifested by anæsthesia, must be change in the nerve cells of the central ganglia, so that, when an impression is received at the extremity of a sensory or afferent nerve, and conveyed to the centre, it is not

received there by reason of some modification in the structure of the nerve cells at that point. This condition will be considered subsequently, when we come to consider diseases of the nervous centres, to which category it more properly belongs.

Anæsthesia may be localized topographically, according to the site of its manifestations, into—

1st, Cutaneous; 2d, Muscular; 3d, of the Fifth Nerve; 4th, Sensorial; and 5th, Visceral Anæsthesia.

The first, and by far the most common form, is that in which the skin is involved, and is manifested in deficiency or total loss of tactile sensibility and of perception of temperature; under which the subject cannot distinguish hot bodies from cold. Under this condition much injury to the cutaneous surface may be received by contact with very hot or very cold bodies.

It sometimes results as a consequence of pressure, as illustrated in the familiar instance of bedsores, although in this condition something further is involved, i. e., modifications of the nutritive nerves.

Anæsthesia of the fifth pair of nerves, is dependent on lesions of that nerve at points in its course which are indicated by the extent of the abolition of sensation.

Thus, if sensation be lost over an extent of surface dependent for its nervous supply upon more than one division of the nerve, the lesion must be located at a point in its course posterior to its division into its separate branches. If, again, the loss of sensation be accompanied by loss of motion in the muscular apparatus supplied by the fifth pair, the lesion must be located at the ganglion of Gasser, or at some point in the course of the nerve posterior thereto.

Or, to go still farther, if the anæsthesia be associated with disturbance of the functions of other nerves contiguous thereto, the seat of the disease must be in the brain itself; in which case, the importance of the symptom becomes more serious, for which Romberg is our authority. This condition sometimes precedes or succeeds its opposite condition, hyperæsthesia, neuralgia; and it is sometimes also associated with paralysis.

That form of local anæsthesia which we have termed *sensorial* anæsthesia—manifested in the nerves of special sensation, the olfactory, the optic, the auditory, the gustatory—belongs more

properly to special branches of pathology, and we shall be obliged to omit its consideration.

Anæsthesia of the mucous surface and of the viscera, is probably dependent on lesion in the sympathetic nerve, of which so little is known that I can give you no positive instructions upon the subject. As a local disease, this condition is neither very common nor very important, but understanding its elementary and simpler forms, you will be better able to appreciate its value when it occurs as a symptom, as a factor, in more complicated conditions.

Let us fix thoroughly and firmly in our minds the definitions of simple morbid conditions, the letters and syllables of disease, and we shall be able to spell the "big words" easily when they come before us.

The diagnosis of anæsthesia must not be made up exclusively from the statements of patients; instrumental intervention will be found necessary frequently. And for this purpose, various instruments have been proposed by different authorities, all, however, consisting of modifications of the same radical idea, i. e., two sharp points, which are to be brought into contact with the skin at the same moment, that their distance from each other may be estimated by the patient, and this estimate will constitute the index of cutaneous sensibility.

These instruments are termed æsthesiometers. That of Dr. Sieveking, commended by most writers, is simply a beam compass; that is, a graduated metal bar, four or five inches long, upon one end of which is fixed at right angles to the axis of the bar, a steel point, while a slide bearing another steel point traverses the bar. That of Dr. Hammond consists of an ordinary pair of dividers, having a graduated arc affixed to one arm. I have very frequently made use of the separated points of a pair of scissors or two toothpicks, to acquire the same information.

There is one point of practical importance to which I must allude, with which it is desirable that you should familiarize yourselves by actual experiment. I mean the normal difference in the sensitiveness of different portions of the surface of the body.

The distances at which the points of the æsthesiometer can be distinguished, vary from half a line at the point of the tongue to thirty lines at the middle of the arm, thigh, back and neck.

The treatment of local anæsthesia depends of course upon the

cause; this being removed, the malady will generally subside. As in the case where it depends upon spasm of the blood-vessels, anæmia, etc., those agents which have been found to improve nutrition, will be found most beneficial—strychnia, mineral tonics, quinine, etc.

Some of the more recent writers upon this subject, Meyer, Hammond, Ratcliffe and others, place more reliance upon electricity than upon any other remedy, and this in the form of the primary current. It is certain that this agent is destined to play a very active part in the neuro-therapeusis of the future.

Editors' Book Table.

[NOTE.—All works reviewed in the columns of the CHICAGO MEDICAL JOURNAL may be found in the extensive stock of W. B. KEEN, COOKE & CO. whose catalogue of Medical Books will be sent to any address upon request.]

Rindfleisch's Text-Book of Pathological Histology. An Introduction to the Study of Pathological Anatomy. By DR. EDWARD RINDFLEISCH, O. O. Professor of Pathological Anatomy in Bonn. Translated from the Second German Edition, by WM. C. KLOMAN, M.D., assisted by F. T. MILES, M.D., Prof. of Anatomy, University of Maryland, etc., etc. Containing 208 Elaborately Executed Microscopical Illustrations. By S. C. Griggs & Co. One volume, octavo. Price, cloth, $6.00; sheep, $7.00.

CONTENTS.

Introduction, Author's and Editor's Prefaces.

General Part.—1. Decomposition and Degeneration of Tissues; 2. Pathological New Formations.

Special Part.—1. Anomalies of the Blood, and the Places of its Formation, especially of the Spleen and Lymphatic Glands; 2. Anomalies of the Circulatory Apparatus; 3. Anomalies of Serous Membranes; 4. Anomalies of the Skin; 5. Anomalies of Mucous Membranes; 6. Anomalies of the Lung; 7. Anomalies of the Liver; 8. Anomalies of the Kidney; 9. Anomalies of the Ovaries; 10. Anomalies of the Testicles; 11. Anomalies of the Mammæ; 12. Anomalies of the Prostate Gland; 13. Anomalies of the Salivary Glands; 14. Anomalies of the Thyroid Gland; 15. Anomalies of the Suprarenal Capsules; 16. Anomalies

of the Osseous System ; 17 ; Anomalies of the Nervous System ; 18. Anomalies of the Muscular System.

Index and Bibliography.

Prof. Rindfleisch's Text Book of Pathological Histology, so justly celebrated in Germany, where it is considered the most complete and thorough work of its kind, having passed rapidly to a second edition, is also very highly valued and commended by German medical scholars in this country, many of whom are not only familiar with the book, but with the author's great reputation as a teacher and professor of this branch of medical study.

The translators are both gentlemen, who, by their past education, have been peculiarly fitted for the task of translating the work. Dr. Kloman from early life has been familiar with the German language, while Prof. Miles has made the subject one of special study, both gentlemen being also practical microscopists. The publishers, therefore, offer a translation of this truly valuable work to the Medical Profession in the United States, feeling the utmost confidence that in both manner and style it will prove acceptable to them. In their preface, the translators say : "In presenting the English reading portion of the Medical Profession with a translation of the valuable work of Professor Rindfleisch, the translators scarcely deem an apology necessary. The merits of the book itself, and the fact that it fills an unoccupied gap in our most recent literature upon the subject of Pathological Histology, was judged to be an ample incentive for undertaking the labor of the translation. The work of VIRCHOW translated by CHANCE, is, in many points, antiquated ; and the more recent work of BILLROTH, translated by HACKLEY, occupies the ground but partially, and is professedly a work of Surgical Pathology.

The work is translated and published in this country by special arrangement with the author.

This book is indispensable to the reading physician.

Electricity in its Relations to Practical Medicine. By DR. MORITZ MEYER, Royal Counselor of Health, etc. Second revised and corrected American Edition, translated from Third German Edition, with notes and additions, by WM. A. HAMMOND, M.D., Professor of Diseases of the Mind and Nervous System and of Clinical Medicine, in the Bellevue Hospital Medical College, etc. New York : D. Appleton & Co. 1872.

Anæsthesia, Hospitalism, Hermaphroditism, and a Proposal to Stamp out Small Pox and other Cutaneous Diseases. By SIR JAMES Y. SIMPSON, Bart., M.D., D. C. L., late Professor of Midwifery in the University of Edinburgh. Edited by SIR W. G. SIMPSON, Bart., B. A., Scholar of Gonville and Caius College, Cambridge. New York : D. Appleton & Co. 1872.

A Handbook of Therapeutics. By SYDNEY RINGER, M.D., Prof. of Therapeutics in University College, etc. New York: William Wood & Co. 1871.

Putnam's Handybook Series. Eating and Drinking; A Popular Manual of Food and Diet in Health and Disease. By GEO. M. BEARD, M.D. New York: G. P. Putnam & Sons. 1871.

Putnam's Handybook Series. Stimulants and Narcotics; Medically, Philosophically and Morally considered. By GEO. M. BEARD, M.D. New York: G. P. Putnam & Sons. 1871.

Neuralgia, and the Diseases that Resemble it. By FRANCIS E. ANSTIE, M.D. New York: D. Appleton & Co. 1872.

Dr. Anstie is too well known a writer to need introduction to our readers. The first part of his book considers pure neuralgia, its nature, complications and treatment. The latter part investigates what he considers as *simulating* affections, such as the pains of locomotor ataxy, alcoholism, syphilis, "spinal irritation," etc.

PAMPHLETS, ETC., RECEIVED.

The Half-Yearly Abstract of the Medical Sciences. Being a digest of British and Continental Medicine, and of the progress of Medicine and the collateral Sciences. Edited by WILLIAM DOMETT STONE, M.D., F. R. C. S. (Exam.) Volume LIV. January, 1872. Philadelphia: Henry C. Lea.

Report of the Chicago Relief and Aid Society to the Common Council of the City of Chicago.

American Association for the Cure of Inebriates. Proceedings of the Second Meeting, held in New York, November 14th and 15th, 1871. Published by order of the Association.

Annual Report of the Superintendent and Physician of the New York State Inebriate Asylum, Binghampton, N. Y., for the year 1871.

Transactions of the Iowa State Medical Society. Compiled and Arranged by A. G. FIELD, M.D., S. B. THRALL, M.D., and J. WILLIAMSON, M.D., Committee on Publication.

The Publishers' and Stationers' Weekly Trade Circular. F. LEYPOLDT, Editor and Publisher, 712 Broadway, New York.

Editorial.

Characteristic.

A city contemporary sometime since stated that the lectures in Rush Medical College were resumed in a *fortnight* after the great fire. The fact is, they were resumed on the *fourth day*, and thereafter continued uninterruptedly until the close of the term.

In a recent issue, the same reliable editor informs his readers that the lectures continued only a little over three months and a half, and gravely suggests that this argues a disposition on the part of Rush College to fall back to the short session of the olden time.

The writer knew better than this, and the gist of his article is an intentional slur unworthy even of him. He knew the cramped quarters to which the faculty and class were driven by the fire. He knew that about every member of the class was "burned out" in the general conflagration, and yet they preferred cramped quarters and privation with Rush College, to the commodious apartments and free tickets of other schools.

The Faculty of Rush College, it is well known, under any ordinary circumstances, desire the longest possible term upon which it is practicable to secure the attendance of medical students; and, at the same time, with their larger practical experience in medical teaching, look with more than distrust and disfavor upon what by our contemporary is termed, euphoniously, "the more rational graded system of instruction." (*Lucus a non lucendo.*)

But it is not our intention to discuss that matter here, neither is it necessary, for there is more than a suspicion that the "graded course," even in the house of its principal friends, is at the best but nominal, if it is not wholly farcical.

The present writer proposes this little test: Of the graduating class of the recent session (shortened by the fire), let any six be taken *at random*, and of the last graduating class of the "graded" school, let any six be *selected* by its Faculty. Let these twelve be examined by any established Board of Examiners (like that of Cook County Hospital, for example), or by a competent committee not connected with either College, and if the Rush graduates, even of the short term, do not pass the best examination, the present

writer will donate $500 to the Museum of the "graded" school. If they do pass the best examination, then our contemporary shall pay the same amount for the benefit of the Museum of Rush College. Or, we will accept any other reasonable mode of testing the relative professional attainments of the twelve that may be presented.

Briefly—neither bricks nor mortar, museums nor length of term, graded or not, determine the status of the graduate. Chinese industry and "graded systems of instruction," nowhere more perfect than in the Celestial Empire, will not bring about the result.

The student must be led in the way of the positive science of the present age, and imbued with sound philosophy by teachers, themselves "up to the times"—zealous, assiduous and clear-headed, receptive of truth—apt to teach.

Claustrum wants to know

If Homœopathy is so very absurd, as recent correspondents of the JOURNAL seek to show, why it is that so many apparently intelligent, and indeed intellectually eminent, people, accept it as a system, and practice its teachings. He especially indicates a learned ecclesiastic of this city, well known as ferociously conservative in theology and priestly domination, but a veritable lay apostle of the infinitesimal gospel. We presume, if the venerable prelate alluded to were asked why so many of the "rulers of the people" believe in the vagaries and puerilities of "Spiritualism," clairvoyance, etc., he would be puzzled for an answer, save upon the ground that, even though not "totally depraved," man is "far gone from original righteousness."

Even Claustrum himself might wonder that the doctrines theological, which he considers so tremendously important, and so indubitably true, the large majority of learned scientists and philosophers utterly reject.

The tendency of extremes to meet is proverbial. The most noted men combine with their genius and learning the weakness and follies of the most obscure and ignorant.

Christendom wonders at the Ethiopian's ascription of marvelous power to his *fetish*, and yet wears raw potatoes and buckeyes in its breeches' pockets, and ascribes magic influences to the pellets and dilutions of Hahnemann and his disciples.

Let the "heathen Chinee" continue to worship his "Josh," so long as the reverend clergy of our land accept the inanities of Homœopathy, and superstitiously rely upon mysteriously operating agents, potato amulets, and buckeye charms.

Eye and Ear Infirmary.

The Chicago Charitable Eye and Ear Infirmary is now located at 579 West Adams street, half a block west of Ashland Avenue. Surgeon's daily visit, 9 to 9.45 A. M. Prof. Holmes can be found at his office, 318 West Madison street, from 10 to 1, daily.

Loot.

Gelatinæ Medicatæ in Lamellis. — By PROF. ALMEN of Upsala, Sweden. Translated by G. Treskastis, M.D.

Prof. Almen proposes to incorporate, for a more convenient administration, medicines in gelatine, made of water, glue and glycerine, or, when the medicine is not soluble in gelatine, gum arabic, or some other emulsive body. After the medicine has been thoroughly and uniformly mixed with the gelatine, it is spread evenly over a glass plate or slate with raised edges and with a perfectly even surface, which is divided by means of a file into 300 equal squares. In order to prevent the shrinking and sticking of the gelatine, the slate is greased slightly, while warm. In this manner the single squares can be easily separated from one another when dry, each containing an exact dose of the medicine.

About 6 grammes (one and a half drachms) of glue are required for 300 squares, and from 15 to 125 drops of glycerine, according to the solubility of the medicine, in order to render the gelatine as strong and flexible as paper.

If medicines are employed which do not dissolve in the preparation, calomel, for instance, a very viscid emulsion must be made in order to prevent the heavy drug from falling to the bottom. Gum arabic is best suited for this purpose. Sufficient water must be used to fill the slate up to the margin.

For the purpose of preparing good gelatine, 6 grammes (1½ drachms) of good glue are placed in 220–230 cc. (7 to 7½ oz.) of water and the necessary quantity of glycerine added. While the

glue is dissolving, the apparatus is made ready and placed in a horizontal position by means of a spirit level.

After the glue is dissolved, the medicine is added, and dissolved by careful stirring. As soon as the liquid becomes lukewarm, it is poured over the plate as evenly as possible, and after a few hours the whole is transferred to a warm room, so as to prevent the mass from solidifying too rapidly.

After 24 hours the mass may be taken off the slate and divided. The following are some of the formulas:

Gelatinæ Morphiæ Acetatis.—For 300 squares, it requires 36 drops glycerine and 75 grains of acetate of morphine, each square containing ¼ grain of the salt.

Gelatinæ Tartaris Emetici.—37½ grs. of tartar emetic, 45 drops glycerine; ¼ gr. or 2 squares for a dose.

Gelatinæ Cupri Sulphatis, contain ½ gr. in each square; same dose as acetate of lead.

Gelatinæ Opii.—The powdered opium is rubbed up in water and well distributed through the mixture; or, better still, is suspended in an emulsion of gum arabic.

Gelatinæ Extracti Opii.—75 grs. extract of opium, 36 drops glycerine; each square contains ¼ gr. of extract.

Gelatinæ Extracti Belladonnæ.—The same as extract of opium.

Gelatinæ Ipecac Pulveris.—The usual quantity of glue is dissolved in water, with 100–130 drops of glycerine; 300 grains of powdered ipecac are added, and the mixture is warmed, and stirred continually until it becomes thick and thoroughly mixed.

Gelatinæ Hydrarg. Chlor. Mitis.—75 grs. of calomel are rubbed with 25 grs. of gum arabic, and a thick emulsion formed by the addition of a small quantity of water; to this the warm solution and 55 drops of glycerine are gradually added.

Gelatinæ Ferri Carbonatis.—An emulsion is made of carbonate of iron with mucilage of gum arabic, and the warm solution of glue is added, with 55 drops of glycerine. The sulphate, sesquichloride and iodide are not suitable.

Gelatinæ Atropiæ Sulphatis.—A warm solution, consisting of 1 grm. (16 grs.) of gelatine, 8 drops glycerine, and 75 c. c (2½ oz.) distilled water, is filtered through paper in a warm funnel, 3 grs. sulphate atropia are added, etc. Each square contains 1–100 gr. of the salt.

Gelatinæ Extracti Physostigmatis, (*Calabar Bean*) are prepared in the same manner.—*Schmidt's Jahrb., Aug.* 1871.

These gelatine squares need only to be floated on a tablespoonful of water to be swallowed easily by the patient.—[Ed.]—*Physician and Pharmacist, Nov.* 1871.

Shall Eczema be Cured?

The hesitation in curing eczema, lest it should "strike in," is thus met by Mr. Milton, in the *Medical Press and Circular:*

For years I have, in every instance, done my best to check the discharge of eczema as quickly as possible. During that period above 5,000 cases have passed under my notice, and as I have never seen or heard of any injurious results, I can only conclude that treatment cannot produce such an effect as bringing on internal disorder by relieving eczema. *Properly employed, treatment is neither innocuous or beneficial.* I can scarcely help thinking that, in such a large number of instances, if injurious results had been at all common, I must have heard something of them. On the other hand, it is quite certain that a number of patients, cured of profuse discharge, often of years' long duration, are, at the present time, not only well, but all the better for being freed from such a disgusting nuisance. I laid before the Medico Chirurgical Society the particulars of a case, where the discharge from an eczema, covering the leg from the calf to the sole of the foot, was so profuse that the patient, an old man in shattered health, said, that often, after a day's work, he returned home with his shoe half full of water. This state of things had gone on for three years, yet the speedy removal of it, so far from bringing on any internal affection, was followed by a decided improvement in the patient's health. The old man was very well known in the part of the city where he resided, near London Bridge, and some years after, when I last heard of him, was certainly quite as well as he had been previous to having the eczema. At the same time another instance was quoted, where a case of long standing eczema of the hand was cured, and where four years after the patient was in excellent health. This man, too, could have been easily identified, being a signal man at the Shoreditch station of the Great Eastern Railway. I could easily add to the list.

No doubt, if a patient suffering under eczema be attacked by some malady assailing the surface of the skin and the internal organization at the same time, as one of the ex-anthemata for instance, the eczema *may* be removed or suspended (for I trust I have shown that this does not certainly happen) as would many complaints, such as gonorrhœa; but I presume it would scarcely be considered the proceeding of a rational being to leave a gonorrhœa to take its own course, lest the removal of it might cause the development of some internal malady.

In all the cases I have seen, where eczema was complicated by an internal disorder such as bronchitis, an exacerbation of this, so far from relieving the eczema, either had no effect or made it worse; while in no case did the increased discharge, when the eczema was worse, in any way mitigate the internal affection. Thus,

a poor weaver, suffering from eczema of the leg, came under my care. The disease of the skin was cured, and the patient remained well till an attack of bronchitis, at the beginning of the ensuing winter, prostrated him. In a very short time the eczema returned as bad as before, but without in the least relieving the bronchitis. A few years ago an old man came under my care for eczema of the leg. He was cured, and after an interval of quite four years, he again applied with the same complaint in both legs. I questioned him closely, and learned that he had fallen into bad health, that then the eczema came on, and that the worse it grew the worse he became in other respects—a statement quite borne out by the results of treatment, for the eczema disappeared as he improved in health. A poor woman was recently in attendance at St. John's Hospital who had been four times the subject of a bad attack of bronchitis; each time she was laid up in this way an old eczema of the ancle relapsed and passed into a state of ulceration. There is a middle-aged woman attending now at the same institution for eczema; she has twice suffered from bronchitis, and twice eczema has followed the coming on of the chest affection.

I could have added many more cases, but I need no longer note them down, as I have found no evidence on the other side of the question, and to heap together facts, merely to swell the bulk of testimony without adding to its real value, seems to me sheer waste of time. My experience is, that *if two or three cases will not induce men to think upon a question, two or three hundred will not.* I shall, therefore, content myself with adducing the evidence of M. Rayer, who supports the view I have been endeavoring to combat, as to there being a connection between the healing of an internal complaint and the cure of eczema. M. Rayer then says,* that he treated a patient for gastro-enteritis, who had been previously suffering from eczema, and that *during all the time the gastro intestinal inflammation lasted, the eczema was worse.* Again he says,† of another patient, "the appetite fell off remarkably (a certain sign that the health was not so good as formerly), an occurrence which was followed by a notable exacerbation of the eczematous affection."

I think, then, we may conclude that the fear of curing eczema, of however long standing it may be, and however delicate the health of the patient, *is not warranted by either proof or analogy;* that no known agent possesses the power of repelling eczema; that we can cure it only by means which improve the health at the same time; and that it is as justifiable to arrest its discharge as that of diarrhœa or cholera. And I may here remark, that all

* "Treatise on Diseases of the Skin." Translated by Willis. Second Edition, 1835. Page 316.

† Ibid. Page 322.

that has been said of eczema may be said of ulcer; there is no danger in healing it up, no bad symptoms ever arose from doing so. Those reported to have occurred were the offspring of prejudice or faulty observation, and offer only a too painful comment on the mode in which surgery has often been studied and taught.

Sesquichloride of Iron as a Prophylactic of Acute Rheumatism.—By Dr. Anstie.

A considerable space of time has now elased since the announcement by Dr. Russell Reynolds, of his observations on the successful treatment of acute rheumatism by large and frequent doses of the tincture of sesquichloride of iron. I do not know to what extent this plan of treatment has become generalized; but there have been a good many reports in the medical journals of its employment in different hospitals; and the balance of evidence derivable from these seems distinctly favorable to the method. My own experience of it in fully declared acute rheumatism has not been large. I have treated six cases altogether with the sesquichloride, and in four of these I think the results distinctly bore out the main assertions of Dr. Reynolds, as to the prompt relief of the pains, the limitation of the extent of the mischief, and the shortening of the illness; in the other two, the medicine seemed to have no special effect. But it is not of the use of the sesquichloride in the fully developed acute rheumatism that I now wish to speak. My opportunities of seeing disease on a large scale being chiefly those afforded by the out-patient room, it is rather the first advancings and threatenings of acute rheumatism, than the declared disease, that I am in the habit of seeing. A considerable number of persons present themselves in my out-patient room, during the course of twelve months, suffering from the preliminaries of acute rheumatism; it is one of the small group of really serious diseases (amongst a much larger variety of trivial complaints), which occupy one's attention in out-patient practice, and was formerly a matter of great dissatisfaction to me, from the apparently almost total failure of remedies to produce any effect. Whereas threatenings of gout could be very commonly dealt with in such a manner as to prevent the attack, or render it trivial, the onset of acute rheumatism seemed never to be averted by drugs when once the prodromata had reached the stage which pretty frequently presented itself before me, viz., a more or less obscure aching of several joints, a yellow sallowness of face, with patches or streaks of dusky redness, blanket-like furring of tongue, an oily moisture of skin, a distinct though slight elevation both of pulse and temperature, and a certain anxiety of respiration. So far as the history of such patients could be traced, they were almost invariably found to have devel-

oped the full symptoms of the acute disease, and very often (after once seeing them in the out-patient room), one encountered them, a few days later, in a ward of the hospital.

Very different have been the results of treatment since I adopted the use of full doses of sesquichloride of iron, from the first moment of such cases presenting themselves. During the past twelve months I have done this fully. Whenever a patient has presented himself with articular pain and slight fever, that were plainly of the rheumatic and not of the gouty type, he has been at once placed on thirty or forty minim doses of the tincture of sesquichloride, from three to six of which, according to the severity of the symptoms, have been given in each twenty-four hours. I have several times called the attention of the students to the fact, that (unlike what used to happen) these cases now reappear in my out-patient room on my next hospital day; and in the great majority of instances declare themselves greatly relieved.—*Medical Archives.*

Alkaline Sulphites in Marsh Fevers.

M. Polli contributes a paper on this subject to the *Journal de Medecine*, in which he remarks that the nature of marsh miasms as well as their action on the organism will be greatly illuminated by the scientific contributions of those who have treated this important question at the medical congress of Florence in September, 1869. Malaria, he thinks, must be included in the class of causes which produce zymotic affections; and he now desires to direct attention to an anti-zymotic remedy, to the use of which he has been first led by scientific induction, and the value of which his clinical experience has not failed to demonstrate.

He conceived, as far back as 1861, the hope of being able to apply it in these cases, from finding that sulphurous acid enjoyed not only reducing properties but also antiseptic and antifermentative qualities, even when combined with the alkalies and the alkaline earths, and that in the state of sulphite it could be administered to animals in much larger doses than when free, without producing any of the inconveniences inseparable either from its inhalation in the gaseous state or from the injection of its more or less concentrated aqueous solution. Numerous experiments practiced on dogs having established the amount of the sulphite of soda, of the hyposulphite of soda, and of the sulphite of magnesia that could on the one hand be tolerated, and on the other was active, he at once proceeded to exhibit it in various diseases produced by the introduction into the blood of various septic and contagious matters, such as putrefying blood, decomposed pus, the fluid of glanders, etc. He then proceeded to determine by experiments instituted on himself and a friend, what doses of sulphite could be

administered to man, with the object of prescribing it in cases of purulent affection, and in marsh fevers. His experiments have extended over several years, and have always been controlled or compared with quinine. The results he has arrived at are:

1. That marsh fever can be cured by the sulphites alone. 2. That the action of the sulphites is less rapid on the attack of the fever than the sulphate of quinine; they do not stop so suddenly the periodical course of the fever, but they usually gradually diminish the violence of the symptoms till they disappear altogether. 3. That the sulphites, *en ravanche*, act much more certainly in preventing the return of the fever than quinine. Amongst 403 cases treated by the sulphites, relapses only occurred in 5.7 per cent., whilst in 183 cases treated with sulphate of quinine the relapses amounted to 44.5 per cent. 4. That many cases of miasmatic fever, long rebellious under treatment by quinine, were cured by the sulphites alone. 5. That the sulphites can be employed with success even as a prophylactic means, and that they may be thus used for long periods without danger, which is not the case with the preparations of quinine. 6. That the sulphites can be administered without danger, in spite of concomitant gastro-intestinal irritation, and during the attack; and finally, that many sequelæ of fever (excepting always anæmia) may be very advantageously treated with the sulphites. Since the sulphites have cured marsh fevers as well and perfectly as quinine, and have been found even still more serviceable than quinine in yellow fever, it has been suggested that the febrifuge action of quinia may be due to an antifermentative action analogous to that which the sulphites exert on putrefying substances, and this view has been maintained and confirmed by M. Pavesi and M. Binz. It is not surprising now that carbolic acid, creosote, etc., have been used in similar cases with good effects. Arsenic perhaps acts in the same manner. The *curative* treatment adopted by M. Polli is given in the following prescriptions: If sulphite of soda be used, the proportion is 20 grammes of the salt in 200 of water, sweetened with honey or some aromatic syrup. This quantity is given in the course of twenty-four hours, in divided doses. When the sulphite of magnesia is prescribed, he gives 12 grammes in the same quantity of water, taken in four or six doses. When the hyposulphite of soda, 15 grammes in 300 of water, taken in similar manner. It is essential to take the remedy one hour before or two hours after a meal, and not to drink, except after a long interval, any acid substance, such as lemonade, or to take acid fruits or vinegar.

The *prophylactic* treatment.—For this purpose he prescribes 6 grammes of sulphite of magnesia, or 10 grammes of sulphite of soda, or 8 grammes of hyposulphite of soda, in two doses, dissolved in water, morning and evening, and considers this sufficient to preserve an adult during the season favorable for endemic disease.

This dose can be taken without inconvenience for several months together. M. Polli does not employ either the sulphite of potash or the sulphite of lime, the first having a disagreeable flavor and a too debilitating action; the latter being but little soluble, and having also a disagreeable flavor. The hyposulphate of lime may, however, be administered, and is very useful in certain phases of tuberculous phthisis.—(*Journal de Medecine, du Chirurgie, et de Pharmacologie, Oct.*, 1871.)—*London Practitioner.*

Clinical Lecture.—Clinical Lecture on those Symptoms in Women which point to the Expediency of instituting Local Examination. By ROBERT BARNES, M.D., Obstetric Physician to St. Thomas's Hospital, etc. etc.

There is nothing special in the mode of studying the diseases of women. Just as the ophthalmic surgeon is led to examine the eye because the patient complains of loss or disturbance of its function, or because he feels pain in it, or has some other subjective symptom referred to that organ, so by disturbances of function or some other subjective sign are we led to the discovery of disease of the sexual organs. When the function of an organ is disturbed, the *prima facie* inference is that the organ itself which constitutes the mechanism by which that function is performed is out of gear. This is not indeed always absolutely true; because an impaired state of the blood, or disordered innervation, or derangement of a different organ, may entail the functional disorder which arrests our attention. The genital organs are no exception to this proposition. The functions of the ovaries, uterus, or vagina, may be seriously deranged by a state of anæmia or blood-poisoning, by disease of the nervous centres, by disease of the heart, lungs, or liver. These functions may be even more seriously affected by mechanical pressure in contiguous parts. Still the fact remains that we can hardly appreciate rightly or successfully treat these primary or correlated diseases if we do not take into careful consideration the state of the genital organs themselves. The general or distant affections require to be investigated and treated; but it is not safe to overlook the organs that may be secondarily involved.

It is needless to say that every woman who is ill and seeks advice does not suffer from disorder of the sexual system. She may labor under various constitutional disorders, and under disorders of parts of the body quite independent of the sexual system. On the other hand, general or local disorders may in their course react upon, and induce disorders in, the sexual system. And there are disorders of this special system, commencing in it, and in their turn reacting upon, and inducing disorder in, distant organs, or in the general system.

These inter-reactions are exceedingly frequent. Indeed, it may be affirmed that no severe constitutional disorder can long con-

tinue in a woman during the predominance of the ovarian function without entailing disturbance in this function. And the converse is also true, that disorders of the sexual organs cannot long continue without entailing constitutional disorder, or injuriously affecting the condition of other organs.

These facts point to the necessity of guarding against the error of fixing our attention too specially upon one particular class of symptoms or upon one organ. Whilst searching out the part which is more especially the seat of diseased action, we must be careful not to overlook possible disease elsewhere, and not to neglect to observe the mutual reactions. The clinical physician, although led by the intuition of experience to seize quickly upon the offending part, will not omit to pass under review the state and working order of the other parts. In this manner most important complications are often brought most unexpectedly to light; and in every case some useful indication in treatment is discovered. The late Professor Chomel, a man of admirable skill, sagacity, and judgment, never failed, when a new case of disease came under his care, to interrogate successively every function. Thus, I have seen him in a case of pneumonia, the signs of which at once arrested attention, proceed nevertheless to explore the abdomen, the uterus, and the rectum. This may look like carrying out a principle to extremes. Yet who shall say that Chomel, as a clinical teacher or as a physician, was wrong?

It is not, indeed, necessary, in ordinary practice, to follow out in rigorous completeness the plan which to the clinical professor may seem desirable. It will therefore be useful to ascertain *what are the leading symptoms which, alone or grouped, indicate such disorder of the sexual organs as to call for direct exploration.*

This is the question we have set before us: When a woman presents herself, complaining of certain symptoms, chiefly subjective, some, or perhaps none, referred to the pelvis, how are we to act? Will these subjective symptoms enable us to refer them to their cause, to establish a diagnosis, to give satisfactory indications for treatment? Hardly. We must therefore call to our aid the objective signs; we must weigh and determine the significance of these before we can arrive at a conclusion at all precise or trustworthy as to the underlying pathological condition. The whole tendency of modern medicine is to subject every organ which manifests functional disorder to direct physical exploration, in order that it may solve the question presented obscurely by the subjective signs. The sound, the probe, the stethoscope, the laryngoscope, the otoscope, the ophthalmoscope, the various forms of speculum, are only so many contrivances for enabling us to project or extend the senses of touch, sight and hearing into the internal structures. In the case of the skin, all is at once exposed to direct observation; and, as Alibert remarked, we should be

glad to have the same advantage in investigating and treating the diseases of the heart, lungs, liver, kidneys, and nervous centres. Why is it that the study of the pathology of the skin and of the eye is invested with such fascinating interest? Those who devote themselves with the greatest zeal and success to this study will tell you that it is because the skin and the eye reveal their condition directly to the senses, and thus furnish not only positive objective signs which the patient can neither suppress nor misrepresent, but also because in this direct observation of the skin and eye they can read and follow, as on a map or on a telegraphic dial, the working of distant organs and of many affections of the genera system. Here, then, you see how the reputed special practitioner, turning to account his special experience, often acquires an insight into general pathology denied to those who neglect the lessons they might read upon the visible organs.

This advantage we possess to a great extent of perfection in the case of the pelvic organs. It is by the proper use of this advantage that so great a degree of precision in knowledge, and of success in treatment of diseases of women, has of late years been attained.

And there is one property in a high degree characteristic of the instruments employed in the investigation of the diseases of women of such singular value that it ought to completely silence the objections at one time so passionately urged against them. It is this: the instruments have a therapeutical as well as diagnostic application; the speculum, for instance, revealing a lesion of the cervix uteri, enables the surgeon at once to apply his remedy. Thus treatment follows upon the track of diagnosis, one sitting and one operation serving for both.

Here, then, as in medicine generally, our first indication of the direction in which we have to look for the disease which causes the patient to complain, lies in the disturbance of function. We have then to consider what these functions are. The first in importance, because it is continued with occasional interruptions throughout the period of active sexual life, is *menstruation*. The other functions are incidental to married life only; these are *the relation to the other sex*, *pregnancy*, and *lactation*.

Most of the diseases which attack the ovaries and uterus, whether primary or secondary, entail some disturbance in the menstrual function. The flow is diminished or in excess, or its periodicity is deranged. It is attended with pain in the pelvic organs, and other nervous phenomena.

We shall discuss the history of amenorrhœa, menorrhagia, and dysmenorrhœa hereafter. Our object now is simply to determine the conditions which suggest local examination. In the great majority of cases of *amenorrhœa* in single women, no local exploration is necessary; but in some cases it becomes imperative; for example, amenorrhœa is sometimes presumptive only—that is, the

secretion takes place, but, owing to some imperfection of structure, it is retained in the cavity of the uterus or vagina. This may be called *occult menstruation.* The suffering becomes urgent in the highest degree, and nothing short of an operation which shall liberate the retained secretion will save the patient. Some cases, again, of suppressed menstruation, leading to effusion of blood behind the uterus, setting up circumscribed peritonitis, and displacing the uterus so as to press upon the bladder, may cause retention of urine. Here again, local examination is imperative. This may be said of every case of retention of urine. In almost every case of retention of urine in women the cause is external to the bladder, and in the great majority it is due to some disease or displacement of the uterus.

Menorrhagia is a relative term; that is, some women lose much more than the average without suffering in health; but whenever the loss continues profuse, obviously entails anæmia and general debility, and persists in spite of internal remedies, local examination is clearly necessary. We shall often find a sufficient local cause in polypus, tumor, inflammation, congestion, hypertrophy, displacement, or malignant diseases, all of which conditions require local treatment.

When we come to study the history of *dysmenorrhœa*, we shall find abundant proof of the almost constant association of this disorder with a mechanical condition of the uterus impeding the easy performance of the function. So long, however, as the distress does not clearly affect the general system, so long as it does not exceed endurable bounds, and if it appears to be moderated by general remedies, it is not necessary to examine; but, in the contrary event, examination should not be long postponed. To postpone examination is to postpone discovery of the cause and effective treatment. This is more especially imperative in the case of a married woman in whom dysmenorrhœa is complicated with dyspareunia and sterility. Abortion, if not primarily depending upon some local disease or displacement of the uterus, is so very likely to be followed by some such condition, that an examination should be instituted. If a sanguineous discharge, even periodical, resembling menstruation, goes on during lactation, especially if it be excessive in quantity and attended by leucorrhœal discharge, it may be almost confidently predicated that there exists some uterine disorder requiring local treatment.

I have used a new word, "*Dyspareunia.*" It is incumbent upon every one who coins a new word to explain its meaning and to justify the innovation. Just as the word "dysmenorrhœa" has been coined in order to express compendiously the condition of difficult or painful menstruation, just as "dyspepsia" is used to signify difficult or painful digestion—we want a word to express the condition of difficult or painful performance of the sexual

function. Such a word would be convenient in many ways. It would enable us to avoid the longer and coarser forms in use, by substituting a single word, at once euphonious, expressive, and in harmony with medical language. After consulting with my colleague, Dr. W. H. Stone, whose high classical attainments give authority to his advice, I have determined to adopt the word "dyspareunia." It is derived from a Greek word, used in this sense by Sophocles. However disagreeable the topic may be, it is impossible to escape reference to a function so important. Dyspareunia in a female is perhaps the most absolute of all the indications of local malformation or disease. It calls the most imperatively for local examination as to its cause. In its milder forms it may make the sufferer's life a course of physical and mental wretchedness; in its severe forms it virtually unsexes her; and in any form it may lead to the most disastrous social calamities.

Taking this condition, dyspareunia, as a symptom of disordered function, we shall be astonished, when we proceed to direct examination of the organs concerned, at finding how many those causes may be, and what a wide field of pathological inquiry is associated with it. For example, there may be original defect or malformation; there may be obstructing tumors or growths, inflammation, dislocation or altered form, disordered innervation—in short, almost every disease to which the sexual organs are liable, may entail dyspareunia for one of its consequences; and in not a few of these diseases, disregard of this symptom may entail positive danger.

The existence of *certain discharges*, such as blood, under conditions of quantity and times of occurrence which distinguish it from normal menstruation, mucous, pus, albuminous, aqueous, fleshy, or membranous, if at all protracted, point clearly to some local disorder as their origin, which requires direct exploration.

Then there are some subjective signs, as pain, lumbo-dorsal, iliac, pelvic, or crural, and a sense of bearing down or pressure upon the rectum or bladder, entailing disorder in the function of these organs. These, especially if connected with abnormal discharges and other symptoms, call distinctly for local investigation.

Then we must observe the constitutional or remote effects of the foregoing conditions. Disorder of the pelvic organs seldom goes on long without entailing anæmia, disordered digestion, hyperæsthesia, neuralgia, or other manifestations of nervous derangement or prostration. Where these conditions are observed in association with marked signs of derangement of function of the pelvic organs, the necessity for exploring the physical state of these is as clear as is that of examining the state of the heart or lungs when these organs perform their function with distress, and the whole system suffers.

Such, then, is a summary view of the conditions, chiefly subjec-

tive, which point out to us the desirableness of instituting direct observation of the pelvic organs. This direct observation commonly enables us to analyze the groups of subjective symptoms; to determine the cause and significance of each, separately and collectively. It always brings to our assistance the discovery of other symptoms, entirely objective; and almost always puts it in our power to apply the proper treatment.—*Lancet*, Oct. 21, 1871.

Therapeutics of the Present Day.

The *Practitioner*, for November last, contains some interesting observations on this subject, by Dr. Henry Kennedy, of Dublin. The leading points to which he calls attention are the following:

1. That the proper position the physician holds, in reference to the administration of drugs, is, that he treats, and, with the assistance of nature, cures disease by their means.

2. That in our endeavors to improve therapeutics, too much must not be expected, inasmuch as there is a limit beyond which we cannot pass, and this limit is, and must remain far short of certainty.

3. That if we ignore the labors of our predecessors we will commit a grave mistake; for they have left after them a mass of therapeutic facts which it would not be possible, even at the present day, to excel; and, therefore, our labors should begin where theirs ended.

4. That the physiological dose of each drug is the proper one to use, as it is only then its therapeutic virtues can be ascertained.

5. That at present the doses of many drugs are much smaller than our predecessors used; and, therefore, the results in our hands cannot be unsatisfactory.

6. That our predecessors, wherever it was possible, used medicines in the form of powder, which had the great advantage of being free from any risk likely to be caused by any other mode of preparation.

7. That experiments thus made must lead to more definite results than any made with other preparations of the same drugs.

8. That compound medicines, like the tincture of perchloride of iron, should be recognized as such, and not as simple drugs.

9. That the use of diluents is a very important principle to recognize in treating disease.

10. That a knowledge of human physiology is essential to give anything of a scientific status to our therapeutics.—*Virginia Clinical Record.*

Transfusion.

Dr. de Belina, of Heidelburg, ascribes, very justly, the failure of transfusion of blood, and the discredit into which it has fallen in France, mainly to the employment of blood which has not been defibrinated, to not determining the quantity of blood to be employed, and finally to the imperfection of the instruments and of the operative methods employed.

The use of blood, not defibrinated, inevitably results in its coagulation in the tubes of the instrument, hence the transfusion becomes impossible, or clots may be introduced into the vein, producing a dangerous or even fatal result. If the clots be large, obstruction of the pulmonary artery and immediate death may result; and if death be not immediate, it may result from an embolus produced by the deposit of clots in some portion of the circulatory apparatus.

Fibrin is not an essential part of the blood, and it may be removed without inconvenience; and, further, the process by which the blood is defibrinated improves it by saturating it with oxygen, and by removing the carbonic acid.

As to the quantity, either too much is often employed, or too much at a time, whence results afflux to the heart, consecutive paralysis, or at least dangerous congestions in different organs.

A proper apparatus for transfusion should fulfill the following conditions:

1st. It should be capable of being kept perfectly clean.

2d. It should have sufficient capacity to contain the required amount of blood, and it should be easily used.

3d. The blood in it should be maintained of the desired temperature.

4th. The introduction of bubbles of air into the vein should be impossible.—*Revue de Therap.*, Oct. 15, 1871, from *Receuil d Med Vet.—Virginia Clinical Record.*

Bromide of Calcium as a Nervine.

According to Dr. William A. Hammond (*Boston Med. and Surg. Jour.*), "Bromide of calcium is a white crystalline substance, very soluble in water, and readily decomposing on exposure to the atmosphere for a few minutes. The aqueous solution is at first colorless, but it soon becomes tawny from a portion of the bromine being set free. Its taste is similar to that of the bromide of potassium, though somewhat more pungent and disagreeable. The formula of bromide of calcium is Br. Ca., and its combining equivalent is 98 (Br. 78, Ca. 20=98); 100 grains, therefore, contain about 79.5 grains of bromine. The dose is from fifteen to thirty grains or more for an adult. It is especially useful in those cases in which speedy action is desirable, as, owing to its instability, the

bromine is readily set free, and its peculiar action on the organism obtained more promptly than when either of the other bromides is administered. Chief among these effects is its hypnotic influence; and hence the bromide of calcium is particularly beneficial in cases of delirium tremens, or in the insomnia resulting from intense mental labor or excitement. Thus, I gave a gentleman who, owing to business anxieties, had not slept for several nights, and who was in a state of great excitement, a single dose of thirty grains. He soon fell into a sound sleep, which lasted for seven hours. The next night, as he was wakeful, I gave him a like dose of bromide of potassium, but it was without effect, and he remained awake the whole night. The subsequent night he was indisposed to sleep as he had ever been, but a dose of thirty grains of bromide of calcium gave him eight hours of sound sleep, and he awoke refreshed, and with all unpleasant cerebral symptoms—pain, vertigo, and confusion of ideas—entirely gone. In a number of other instances, a single dose has sufficed to induce sleep, a result which rarely follows the administration of one dose of any of the other bromides. In some exhausted conditions of the nervous system, attended with great irritability, such as are frequently met with in hysterical women, and which are indicated by headache, vertigo, insomnia, and a mental condition of extreme excitement, bromide of calcium has proved in my hands of decided service. Combined with the syrup of the lacto-phosphate of lime, it scarcely leaves anything to be desired. An eligible formula is—R. Calcii bromidi 1 oz.; syrup. lact. phos. cal. 4 oz. M. ft. sol. Dose, a teaspoonful three times a day in a little water. In epilepsy I have thus far seen no reason for preferring it to the bromide of potassium or sodium, except in those cases in which the paroxysms are very frequent, or in cases occurring in very young infants; of these latter, several, which had previously resisted the bromide of potassium, have yielded to the bromide of calcium. It does not appear to cause acne to anything like the extent of the bromide of potassium or of sodium."

Symmetry in Cutaneous Affections. — Clinique of Mons. Noel Gueneau de Mussy.

The tendency to symmetry, which is one of the laws of normal organic development, is often found as a pathological symptom, and manifests itself by the repetition of the same morbid action in similar portions of the two sides of the body. Thus the caries of one tooth is often followed by the caries of the corresponding tooth; the affections of the eyes are often double; the wound of one eye, especially when a foreign body has penetrated the organ, frequently involves the other. In gout and in rheumatism, very often, when one articulation is attacked, the corresponding one is involved at the same time or is invaded soon afterwards.

In eruptive fevers, in many cutaneous affections, this symmetry is observed; it is more easily explained when occurring in organs to which are distributed the cerebro-spinal nerves, which are developed symmetrically on the two sides of the body, and which are under the control of the strongly centralized innervation whose source is the encephalon. It is there more apparent; it shows itself, however, in the domain of the grand sympathetic. Here also are pathological consensus, sympathies in the proper sense of the word between the two halves of simple organs, between the double organs, like the two kidneys, the two ovaries.

Graves has described one of the most striking examples of pathological symmetry in median erysipelas. He has formulated this law, that when erysipelas commences on the median line, it will develop itself symmetrically on each side. A case observed recently by myself at the Hotel Dieu, gives such a striking and curious confirmation of this law of Graves' that I think it proper to report it.

During June, 1871, I received into my wards a man affected with erysipelas of the face. The attack had commenced on the bridge of the nose, and had extended symmetrically on both sides. The third day it occupied the brow, but beyond and beneath the frontal protuberances there existed two triangular spaces nearly two and one-half centimetres, where the skin, pale and depressed, remained perfectly sound. Its color, normal in this space, contrasted with the red carmine coloration of the neighboring parts. The edges which surrounded this part of the skin, still unattacked by the erysipelas, formed a raised border, indicating, according to the remark of Chomel, that the morbid action had not been arrested, and that this portion of the teguments, as yet respected, would undergo an ulterior invasion.

On the left the external border of the triangle corresponded exactly to a linear cicatrix caused by an ancient wound of the brow which had divided the skin in its entire thickness. The right half of the brow had not received any injury, but nevertheless the part of the integuments untouched by the erysipelas presented exactly the same form, the same seat and the same dimensions as that which in the left side was contiguous to the cicatrix. These two triangles had a perfect geometrical equality; their position and direction were absolutely similar.

We may suppose that the interruption of the vessels by the cicatrix, which was evidently perpendicular to the branches of the frontal artery, had retarded on the left the erysipelatous action, but on the right the law of symmetry alone was able to explain this anomaly which was only temporary as I had forseen. At the end of twenty-four hours the erysipelas had passed the obstacle and the brow presented a uniform redness, upon which the cicatrix of the left side marked only by a white line the place which the previous evening had exhibited the triangle.

The seventh day the erysipelas had disappeared and the patient became convalescent.

This case, confirming the law of Graves, appeared to me to raise interesting questions of pathological physiology. What is the cause of this unison which clothes the morbid action with such vigorous equality and such perfect symmetry between similar parts? If, as physiology teaches, the vascular action which controls the extension of the erysipelas is placed under the operation of the nervous system, we may say that the left centripetal nerves have transmitted to the centres of innervation the impression of the obstacle presented by the cicatrix to the advance of the erysipelas, and that these centres had controlled, in consequence of the vaso motor, innervation necessary to harmonize the two sides.

It is certain that the sympathetic nerves anatamose among themselves, that the two halves of the brain are united by numerous commissures; perhaps, even as some anatomists admit, the cerebral nerves right and left are reunited near their origin. But in what conditions and in what manner is the action of these nerves harmonized? Our observations and our scalpels have as yet interrogated the cerebral mass without discovering the secret.

In some cases we are able to establish a connection between the anomalous modifications of the nerves and the lesions of the integuments. Thus we sometimes observe violent pains in the lumbar region towards the emergence of the nerves, where some days afterwards the appearance of zona (shingles) follows the direction, and indicates, so to speak, the route. Often it even throws its vesicular groups over the track of the different branches which have among themselves connection in their origin. An eruption may succeed the neuralgias, which are sometimes very obstinate. I remember having seen, with Chomel, an old lady who, twelve or fifteen years previously, had been affected with zona, and who suffered, many times a year, attacks of violent neuralgia, occupying the region where the hepatic groups had been developed.

I have elsewhere cited the singular excitability of the skin by certain agents in patients attacked by neuralgia. In two of these patients of whom I have spoken, opium, and in others turpentine, produced the appearance of eczematous eruptions upon the parts whose sensibility had been altered.—*Revue Medicale.—Virginia Clinical Record.*

Carbolic Acid and Sulphite of Soda in Small Pox.

Dr. D. P. Boyer, of Phila., states (*Med. and Surg. Reporter*), that the following treatment has proved as much a specific in small pox as quinia is in intermittent fever; not only in his hands but also in those of Dr. A. H. Boyer, of Bridesburg.

"Considering *small pox* purely a *blood poison*, and the eruption an effort of nature to throw off or eliminate that poison, I concluded to strike at the root of the disease, and direct my treatment solely to the eradication of that poison. For which purpose, I gave a solution of 2 grains of carbolic acid, and 15 or 20 grains of sulphite of soda every three (3) hours, *with no other* treatment than an ordinary purge during the initiative or forming fever. The result, after several months' trial with myself and son, has been that in *every case of variola* and confluent small pox, on the fourth day of the eruption, the swelling of the face abated, the pulse fell to a normal rate, and the tongue commenced cleaning, the eruption commenced to dry up, and the pustules withered and *shriveled.* By the seventh and eighth day of the eruption the patient was convalescent, without a sign or mark of having small pox after the slight desquamation of the light scales, or scales fell off. In no case by this treatment did the pustules positively mature, but always dried up before maturation. Externally, any soothing or cooling application for the first three days is all that is required to allay the itching, etc.

"N. B.—I am not satisfied that this treatment is a protection from future attacks of small pox, from the fact that it eliminates the poison from the blood, and dries up the eruption, etc. I believe that it leaves the system in exactly the same condition in which the disease found it. I think vaccination is required after the disease."

Excision of the Shoulder-Joints for Diseases.

Dr. Ewens, of Cernes Abbas, reports in the *Lancet* two cases of diseases of the shoulder, in one of which an elliptical incision was made, whilst in the other excision was performed by a modification of the single longitudinal incision, both terminating successfully. The first case occurred in a girl, aged 18, who originally suffered from inflammation, apparently of a rheumatic character, of the left shoulder-joint. An abscess formed and pointed at the posterior border of the insertion of the deltoid muscle. Six months after, she was weak and emaciated, with almost complete loss of power to move the arm herself, and forced movement excited great pain. There was a second opening above the joint, when the abscess burst, and both communicated with a sinus leading to the posterior portion of the axilla. No diseased bone could be detected by a probe, but it was shrewdly suspected that disease of the shoulder-joint existed. She was placed on a generous diet, cod-liver oil and iron. The paroxysms of pain were very severe, and as the disease advanced, became so violent as to necessitate a frequent resort to hypodermic injections.

At length, acting on the advice of Mr. Pollock, Dr. Ewens made an exploratory incision, and after some groping discovered loose bone. The ordinary elliptical incision was thus made, the flap dissected up, and the diseased joint fully exposed. The head of the bone was found in a very carious condition, and a portion, shortening the bone by about an inch, was removed by Butcher's saw. The wound was sponged with carbolic acid and oil, in the proportion of one part of the acid to four of the oil; the flaps re-adjusted and secured by pins and twisted suture. Sickness, due to the chloroform, occurred after the operation, but passed off in the course of 24 hours. She progressed favorably for 10 days, when a slight rheumatic attack supervened, which was cured by ammonio-citrate of iron and bicarbonate of potash. From this date she gradually improved; but a small sinus still remained, which, indicating more diseased bone, necessitated a further operation. A small portion of the shaft was again removed, and rapid recovery followed.

Fourteen months afterward the arm was two inches shorter than the other. There was perfect use of the arm for underhand work, and power to move it behind her and to bring it forward on the chest. There was, however, no power to raise the arm.

In the second case, a large abscess had formed beneath the right pectoral, and had been opened; a sinus remained beneath the outer part of the mammæ, behind the pectoral muscle, into the axilla, but a long probe failed to reach diseased bone, or to find the end of the sinus. Careful examination elicited the history of a blow over the front of the shoulder three years prior to the opening of the abscess, with an account of symptoms of joint disease, but ascribed to rheumatism, in the intermediate period. A swelling was found on the back of the shoulder, and opened by Dr. Ewens, and curdy pus was evacuated. Her general health improved, but several times spots of erratic erysipelas appeared on the arm, speedily subsiding under the local application of strong tincture of iodine. As the sinuses did not heal up, an exploratory incision was determined upon, and the wound at the back of the joint was enlarged so as to enable the finger to be introduced under the deltoid, which was then cut through transversely, a little below its origin from the spine and acromion process of the scapula, and the joint was thus laid open posteriorly.

There was little hemorrhage. The head of the bone was found to be completely carious, with a large sequestrum in its centre. The posterior half of the deltoid being thus divided horizontally, a perpendicular incision carried through its whole length down to its insertion into the humerus, fully revealed the parts to be removed. The patient being very fat, Butcher's saw could not be conveniently used, and the bone was therefore sawn through with an ordinary finger saw, the portion removed representing a short-

ening of about two inches. The wound was dressed as in the former case, and the patient made a more than ordinarily quick recovery, she being perfectly well in three months.

Disinfectants.

M. Gille has published in the *Archives Medicales Belges*, an interesting article "On the value of a Disinfectant," in which he says we must not only get rid of offensive smells, but of all other products of decomposition, and that any substance which only effects one of these ends, is a very imperfect disinfectant. He then passes in review some of the disinfectants in common use. Sulphate of iron he considers is useful from its action in decomposing ammonia, carbonate, and sulphohydrate. Perchloride of iron, besides this, precipitates albuminoid matters, and acts also by its chlorine. Lime disinfects organic matters, fixing carbonic acid and sulphuretted hydrogen, and decomposing hydrosulphate of ammonia. The permanganate of potass. is a most energetic oxidizing agent, decomposing sulphuretted hydrogen, destroying organic matter, and acting upon all fixed compounds with which it comes in contact.

It may be remembered that M. Decaisne employed it in dissecting rooms, but that M. Gosselin, in 1864, reported that it was not adapted for this purpose. Chlorate of potassi may be used to disengage chlorine in places that are not easy to reach by other means. This is a capital plan for cesspools and middens.

Chloride of lime acts by the chlorine it sets free, and chemically decomposes most foul gases. M. Decaisne considers it the best disinfectant of offensive gases. Does it also, mixed with metallic oxides, act by disengaging oxygen as has been asserted? M. Gille doubts this. He also observes that, although chloride of lime destroys offensive gases, it does not arrest putrefaction, but by the lime set free, hastens the process.

Hydrochloric acid is employed to disinfect dog-kennels. Vessels containing it being left open, it completely destroys the offensive gases that abound where a large number of dogs are kept. This plan is adopted in the Veterinary School of Brussels.

The action of carbolic acid, M. Gille says, is not chemical. He accepts what is commonly called the germ theory, inasmuch as he says the acid prevents germs from provoking putrefaction. He also thinks it will hinder the formation of miasms, and is, therefore, a good preventive of epidemics. It is thus to be seen that all the disinfectants are good, but that they should be used with discernment, a selection being made according to the products we wish to get rid of.—*Canada Med. Journal.*